

Public Utilities

Volume 68 No. 1



July 6, 1961

Measuring Price-Supply Relationship for Natural Gas

*By Theodore H. Levin and
Dale Berman*

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The Growth of Telephone "Salesmanship"

By James H. Collins

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Cost of Debt for Rate of Return

By Robert G. Towers

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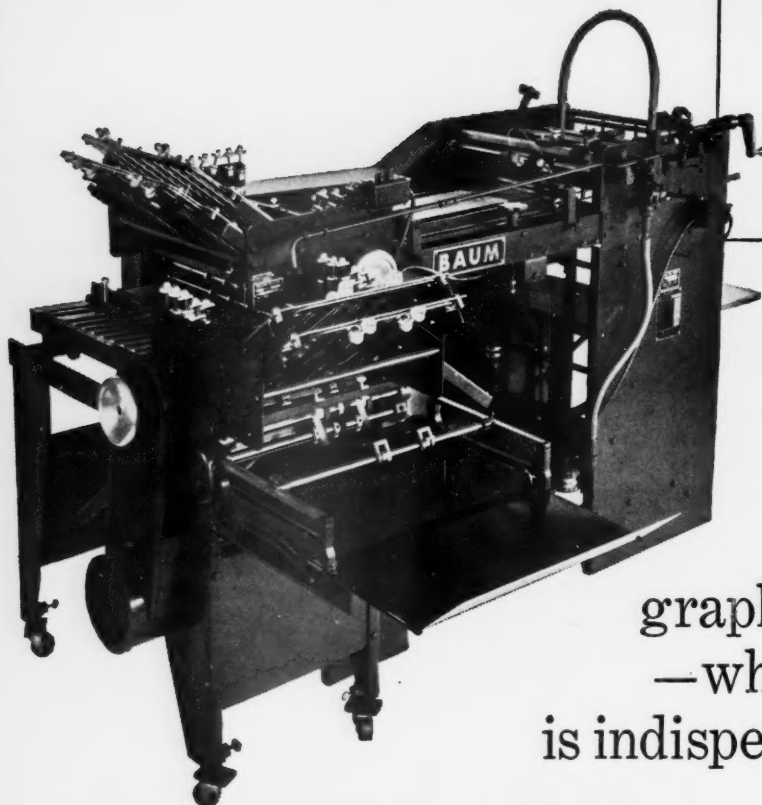
Centralized Punched Card Billing

By J. P. Bromley

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The EEI's Twenty-ninth Annual Convention



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Public Utilities

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VOLUME 68

JULY 6, 1961

NUMBER 1



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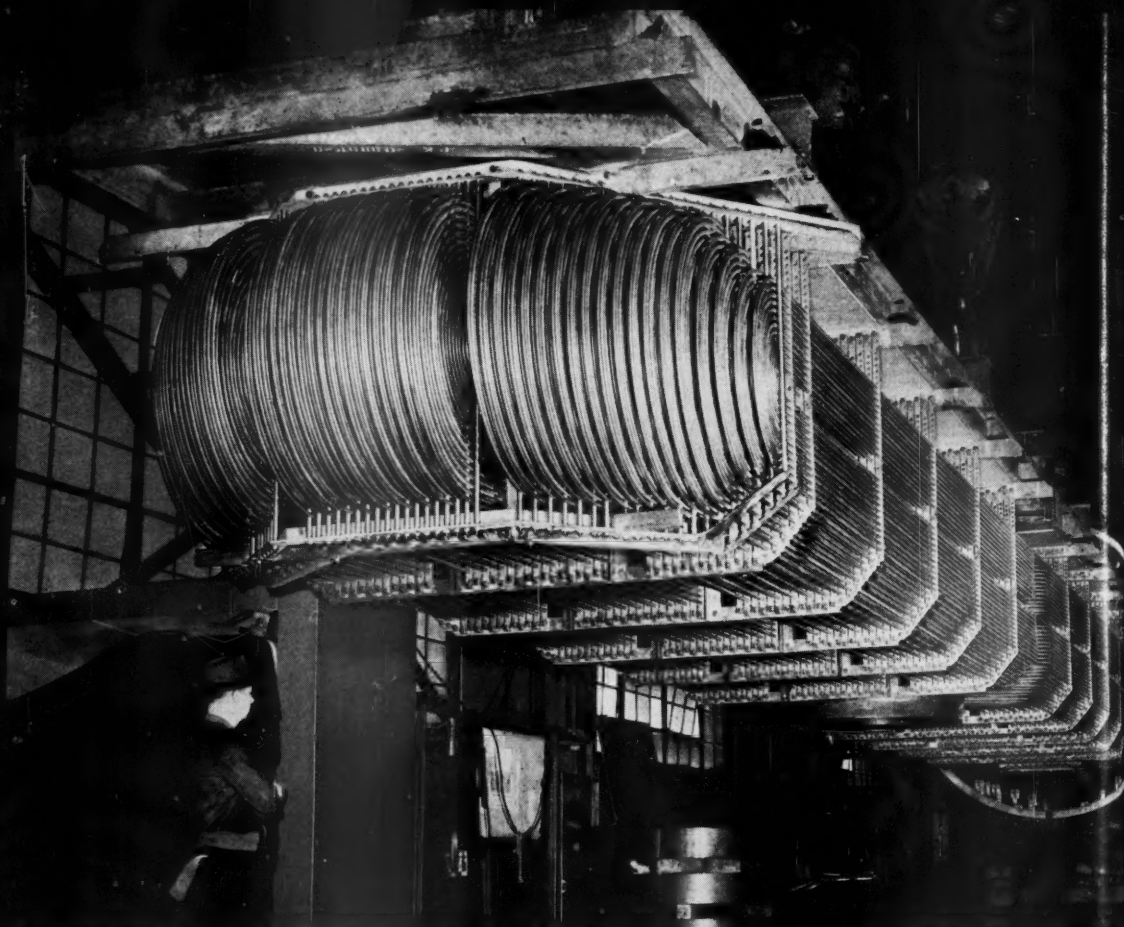
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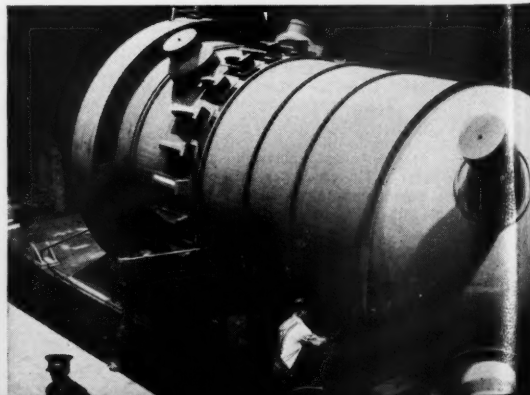


This steam generator, being assembled in a C-E shop, is one of ten on order for the Atomic Energy Commission's New Production Reactor, Hanford Works, Richland, Washington. Designed and built by C-E, each generator is 10 feet in diameter, 57 feet long, weighs 170 tons and contains 20 miles of stainless steel tubing. (See below.)

Designed and Built by C-E

loaded aboard a special, heavy duty flatcar; a completed steam generator begins its trip to Hanford (see photo and caption above). If all ten units are used to generate power, Hanford will be the world's largest nuclear power plant with a capacity of about 700,000 KW.

The reactor vessel for the country's first commercial (PWR) nuclear plant is shown here prior to its trip to Shippingport. This 250 ton, 8' thick vessel was designed and built by C-E.



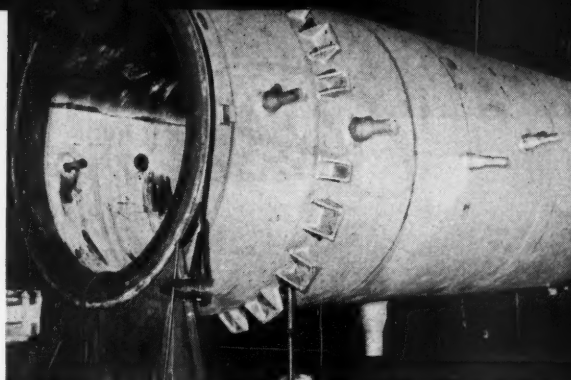
the steam generators and reactor vessels pictured here representative of Combustion's ability to serve the power field in the design and manufacture of heavy pressure components.

But C-E experience in this area is not limited to the as illustrated. For instance, current C-E work includes design of the reactor vessel for Italy's first commercial Boiling Water Reactor (SENN); the design and fabrication of the reactor vessel for the 50 emw BWR for the Super Power Company's Big Rock Point Plant; the design and fabrication of the reactor vessel for the world's first PWR, the 375 emw plant of Southern California Edison Company. The "Southern Cal" vessel will weigh in at about 450 tons, will stand 43 feet high, will be 10 1/4 feet thick and will have a diameter, over flanges, of about 15 feet.

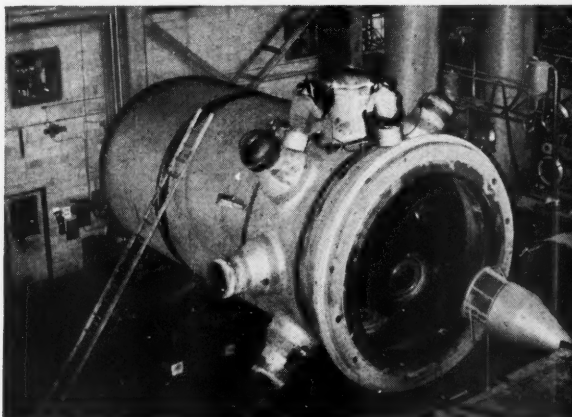
In addition to this work for the electric utility industry, C-E has been a major component supplier to the Navy, having designed and built reactor vessels for a number of nuclear powered submarines, the Aircraft Carrier Enterprise, the Cruiser Long Beach, and the Frigate Bainbridge.

C-E has the personnel, the facilities and the know-how to design and build components of all kinds. It specializes in those which are large, heavy or thick—those which require a high degree of finish—those which are extremely complex—those made of stainless steel or special alloys or those which must be surgically clean or optically flat. C-E heavy duty dock loading facilities, adjacent to its plant on the Tennessee River, allow the economical movement by water of very heavy components (in excess of 400 tons). All coastal points and many inland cities can be reached via the inland waterway system and without clearance restrictions.

For further information, write to your nearest C-E office or to Nuclear Component Sales in Windsor, Conn.



Reactor vessel for Pacific Gas and Electric Company's 50 emw Boiling Water Reactor Plant at Humboldt Bay. This 140 ton vessel is 10 feet in diameter and 42 feet long. It was designed and is being built by C-E.



Hydro caps being welded to the nozzles of the reactor vessel for the 180 emw Pressurized Water Reactor for SELNI (Societa Elettro-nucleare Italiana), Italy. This vessel, designed and built by C-E, has a shell thickness of 9 1/2-inch and weighs 285 tons.

Combustion

Made entirely of stainless steel, this reactor vessel is part of the Liquid Sodium Cooled, 100 emw, Fast Breeder Reactor system of the Atomic Power Development Associates at Lagoona Beach, Michigan. One of the most complex vessels ever built, it weighs about 380 tons, including its rotating plug. It was designed and built by C-E.

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Pages with the Editors

IN this space age of electronic computers, it is astonishing how the more old-fashioned general principles of economics, such as those governing the phenomenon of supply and demand, can be translated into precise requirements. We have come a long way from the casual days of Adam Smith when supply and demand were considered to be the by-products of individual opinion, preference, or even caprice.

THIS is not to say that modern society does not still demonstrate a host of very decided varied tastes and preferences for products and services. It does indeed, according to different sectional and class characteristics of consumers. But it is no longer left to the snap judgment of some buyer, or manager who likes to play hunches, however experienced, to estimate what tomorrow's market will be. There are too many precision tools lying around for determining what the trend is today and what the demand and supply may be tomorrow for any key product or service.

THIS use of specialized formulas is even being taken over by the customers themselves, especially industrial consumers. There is a necessity for manufacturing corporations in pricing differentiated production, as is the case in the sale of natural gas, to undertake an estimate of demand at various price levels.

THE opening article in this issue is a discussion of the economic concept of the elasticity of supply and demand and its application to the natural gas industry. It points up the need for companies to prepare a demand schedule, especially when public utilities must make assumptions with relationship to the prices and demand when they submit revised rate schedules to regulatory agencies.

THIS article is the joint product of



DALE BERMAN

THEODORE H. LEVIN, currently with the Small Business Administration and now on leave from his post as associate professor of economics and business administration with the American University. His coauthor is DALE BERMAN, economic statistician for H. Zinder & Associates, Inc., and professorial lecturer in statistics at American University. Prior to joining the Zinder organization, Mr. BERMAN was associated with Boni, Watkins, Jason & Co., in both their New York and Washington offices.

* * * *

ONE point of contact between the average citizen and the space age of electronic computers, which is becoming fairly commonplace, is the monthly utility bill. For several years now utility customers all over the United States have grown used to the somewhat cryptic appearing punched cards on which the name, address, amount of consumption, and monthly charge are printed. Strictly from the standpoint of artistic attractiveness, the punched card bill is certainly no improvement over the old-fashioned personalized bill with its cordial bill stuffed message, ranging from safe driving hints to cooking recipes. But the blunt fact is that the sheer volume of modern utility billing could probably be handled in no

This is not an offering of these shares for sale, or an offer to buy, or a solicitation of an offer to buy, any of such shares. The offering is made only by the Prospectus.

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Rights, evidenced by Subscription Warrants, to subscribe for these shares at \$71 per share have been issued by the Company to holders of its Common Stock of record June 13, 1961, which rights expire July 5, 1961, as more fully set forth in the Prospectus.

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June 20, 1961.

other practical way. In this day of automatic billing devices when even the smaller utility companies must process tens of thousands of utility bills every working day, the appearance of the electronic billing equipment was certainly a god-send.

MAYBE something can be done in the future about the somewhat cold and impersonal façade of the card punched bill. Reddy Kilowatt brightens it up a bit, and occasional season's greetings overprinted help a great deal. But the main thing is that the job is done. It is done accurately and it is done on time. The perfuming of the rose and the gilding of the lily in the billing department may come later. Suffice it to say there is still much work to be done.

IN this issue we have a down-to-earth description of the growing importance of getting a better job done in less amount of time, as exemplified by the operation of a large and important Middle West utility, Consumers Power Company of Michigan. This description of a modern centralized punched card accounting system (which begins on page 24) comes to us from J. P. BROMLEY, assistant controller for Consumers Power Company. He tells about the advantages in time and labor, both to the company and its customers. This computer card system presently handles 70,000 meter read cards and 56,000 bills each day for this company. It has resulted in reduction in operating

cost control and easier access to statistics and vital reports.

* * * *

COST of capital for more than two decades has been used increasingly as a measure of determining a fair return for a utility. But there are different kinds of cost of capital in this connection. There is the historical or so-called imbedded cost of capital represented by the utility's actual experience in raising capital of different kinds. Then there is the more difficult current cost of capital which must be determined by comparison with the experience of other utilities.

A BRIEF article in this issue, which begins on page 20, brings to light an interesting suggestion that a large percentage of regulatory decisions using the cost-of-capital approach have relied most heavily on imbedded cost in determining the debt capital. This is the conclusion reached in a study by ROBERT G. TOWERS of the Martin Toscan Bennett Associates, Inc., Washington, D. C. He explains the use of actual cost or imbedded cost of debt and its relation to operating expenses, rate of return, and other factors. MR. TOWERS is a graduate of the Maryland University.

* * * *

JAMES H. COLLINS, Washington business writer, who conducts his own form of entertaining surveys about utility practices, gives an account of the growth of so-called telephone salesmanship in his article beginning on page 11. It is perhaps not generally realized that the telephone companies have encountered some difficulties in establishing an effective "sales department." Other types of utility management may find some pointers of interest in this description of how modern telephone company management has gone about selling customers.

THE next number of this magazine will be out July 20th.



ROBERT G. TOWERS

The Editors

CONTINUING TO SERVE BUSINESS AND INDUSTRY

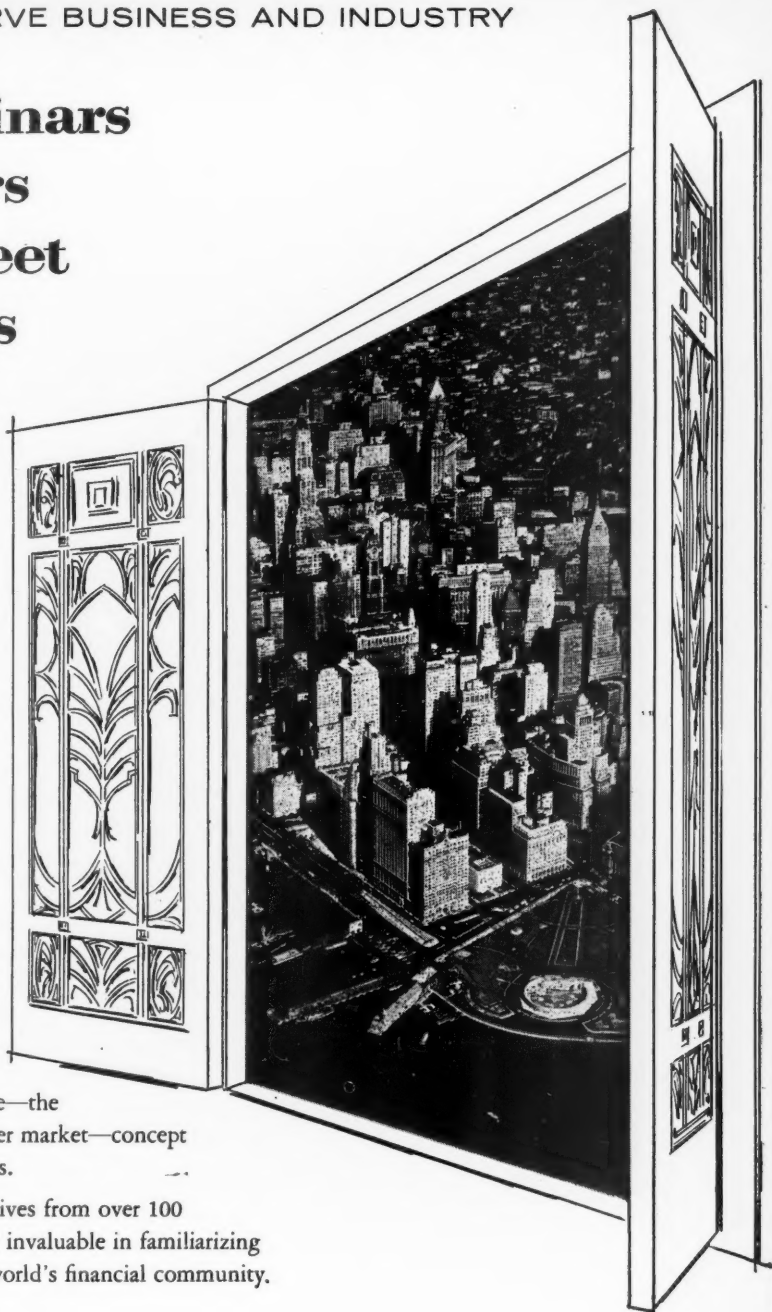
Irving seminars open the doors of Wall Street to Utilities

One Wall Street, Irving specialists are ready with new and sound approaches—with seminars, for example, designed to provide the financial insight demanded by today's rapidly growing Utilities. In addition to meetings with Irving specialists, these seminars offer contact with experts from the many firms of the Wall Street community. It is these experts who actually make the Irving seminars possible.

Here's a brief list of some of the topics Irving opens for Public Utility executives during a Seminar week:

Wide view of rating agencies—explanation of the functions of the investment banker—operations of the stock exchange—the broker and dealer and the over-the-counter market—concept of regulation—cost-of-capital—and others.

It goes a typical week that utility executives from over 100 companies across the country have found invaluable in familiarizing themselves with the ins and outs of the world's financial community.



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Coming in the Next Issue...

(JULY 20, 1961, ISSUE)

THE RAILROADS' "FOUR FREEDOMS" AND REGULATION

Despite numerous proposals and attempts to help the ailing railroad industry on the federal, state, and local levels, much still remains to be done "if the railroads are to be saved." This is the belief of Charles F. Phillips, Jr., in his discussion of the current muddled rail transportation picture. The author, an assistant professor of economics in the School of Commerce and Administration, Washington and Lee University, takes a look at the depressing economic picture and discusses the basic problems which affect the industry. The author also evaluates the four freedoms for which the railroads have asked: freedom from destructive taxation, from stifling regulation, from subsidized competition, and freedom to diversify. Finally, there is a concise outlook for, and evaluation of, the industry's future.

PUBLIC UTILITIES AND PEOPLE—INSIDE THE COMMUNITY

Investor-owned utility companies should not isolate themselves from the community around them. This is the subject of an article by James W. Carpenter and Robert T. Livingston, who urge that utilities take a more active rôle in community and national happenings. They contend that it is unfortunate so many companies place little or no emphasis on so-called "customer relations." Utilities should recognize they are servants of the people and always keep in mind their consumer and community responsibilities. The authors also discuss the rôle utilities should take in furthering their interests in local, state, and national politics. Carpenter is the retired vice president of the Long Island Lighting Company, while Livingston is professor of industrial and management engineering at Columbia University.

PRICE-EARNINGS: PRICE-DIVIDENDS?

A re-evaluation of numerous studies concerning the influence of earnings and dividends on the common stock prices of investor-owned utilities is contained in this article by Professor M. Richard Sussman. He discusses the relationship dividends should bear to earnings and takes as his starting point the points of view of others expressed in recent issues of the *FORTNIGHTLY*. The author is an assistant professor of finance in the College of Business Administration, Pennsylvania State University.

AND IN ADDITION . . . Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.

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—MONTAIGNE

EDITORIAL STATEMENT
*Calhoun Times, St. Matthews,
South Carolina.*

"If Socialism engulfs our country, it will be due to the cupidity of people who think they can get something for nothing from government."

DWIGHT D. EISENHOWER
*Former President of the
United States.*

"A free, healthy, competitive economy cannot long exist if it is to be subject to political abuse, bewildered by constantly shrinking dollars, and continually fearful of government control."

KEITH FUNSTON
*President, New York Stock
Exchange.*

"Risk-taking and economic growth are not going to be stimulated by squeezing more money out of the pockets of millions of investors, already discriminated against by unfair double taxation."

NEWTON N. MINOW
*Chairman, Federal Communica-
tions Commission.*

"Television has joined home, church, and school as one of the great influences on American children. I believe that broadcasters have a positive obligation to use this medium to elevate, inform, and uplift, as well as to entertain."

WILLIAM HENRY CHAMBERLIN
Columnist.

"The ideal society is one in which people are allowed to retain enough of what they earn to pay for their homes, medical services, and other needs without government assistance. There was a time when we actually had such a society in the United States."

ROBERT W. SARNOFF
*Chairman of the board, National
Broadcasting Company.*

"[Network television has given the American people an] unparalleled opportunity to become familiar with the thinking and character of the leading personalities of our time; with the events that are shaping our future; and with the issues that engage us all."

SHERMAN R. KNAPP
*President, The Connecticut
Light and Power Company.*

"Edison deserves a full measure of credit as the founder of the electric utility industry. But he and many others who contributed to the industry's subsequent success as an important element of our free enterprise economy owe a great deal to the form of government under which they were permitted to operate."

EDITORIAL STATEMENT
*Newark (New Jersey)
Evening News.*

"... the most encouraging development in the railroad situation is the new interest of the federal government. It alone can provide the leadership and apply pressures for modernizing the railroad structure. It alone can formulate a national policy that will assure stability and equal opportunity for all forms of transportation."

Utilities Events Calendar

CHECK THESE DATES:

July 10-12—National Association of Television and Radio Farm Directors will hold convention, Washington, D. C.

July 10-28—Summer Workshop on Television in Education, University of California, Los Angeles, Cal.

July 10-Aug. 4—Practising Law Institute will hold annual summer session for practicing lawyers, New York, N. Y.

July 12-13—National Association of Railroad and Utilities Commissioners, Executive Committee, will hold meeting, San Francisco, Cal.

July 14-15—Second Human Events Political Action Conference will be held, Washington, D. C.

July 16-18—South Carolina Association of Broadcasters will hold summer convention, Myrtle Beach, S. C.

July 17-21—Western Summer Radio-Television and Appliance Market will be held, San Francisco, Cal.

July 16-21—Conference on Electrical Techniques in Medicine and Biology will be held, New York, N. Y.

July 23-Aug. 4—Columbia University Utility Management Workshop will be conducted, Arden House, Harriman, N. Y.

July 25-Aug. 10—International Trade Fair will be held, Chicago, Ill.

July 30-Aug. 5—American Women in Radio and Television will hold first mid-career seminar, Syracuse, N. Y.

Aug. 1-4—Advertising Age Summer Workshop on Creativity in Advertising will be held, Chicago, Ill.

Aug. 6-8—Georgia Association of Broadcasters will hold annual summer convention, St. Simon's Island, Ga.

Aug. 7-11—American Bar Association will hold annual meeting, St. Louis, Mo.

Aug. 11-12—Texas Associated Press Broadcasters Association will hold annual meeting, Odessa, Tex.

Aug. 21-23—Alaska Telephone Association will hold annual convention, Palmer, Alaska.

Aug. 22-25—Western Electronic Show and Convention will be held, San Francisco, Cal.

Aug. 23-25—American Institute of Electrical Engineers will hold Pacific general meeting, Salt Lake City, Utah.

Aug. 28-30—Appalachian Gas Measurement Short Course will be held, West Virginia University, Morgantown, W. Va.

Aug. 28-Sept. 1—American Society of Mechanical Engineers will hold international heat transfer conference, University of Colorado, Boulder, Colo.

Aug. 28-Sept. 8—National Association of Railroad and Utilities Commissioners, Special Committee on the Training of Commission Personnel, will hold short course, Atlanta, Ga.

Aug. 30-Sept. 1—American Institute of Mining, Metallurgical, and Petroleum Engineers will hold third annual semiconductor conference, Los Angeles, Cal.



Courtesy, General Electric Company

It's a "Cool" Alamo

Recently the Alamo at San Antonio, Texas, has been air-conditioned with General Electric Weathertron Heat Pump Handlers. Much effort was made to conceal the equipment in the historic building. One of the ducts can be seen in the upper right of this photo in what had been a choir loft. Hand wrought grills have now been mounted over this opening to further conceal the twentieth century addition to the eighteenth century building.

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Public Utilities

FORTNIGHTLY

VOLUME 68

JULY 6, 1961

NUMBER 1



Measuring Price-Supply Relationship For Natural Gas

Is there a necessity for manufacturing corporations in pricing differentiated products, as is the case in the sale of natural gas, to undertake an estimate of demand at various price levels? The economic concept of elasticity of supply and demand, its application to the natural gas industry, and the need for companies to prepare a demand schedule are discussed, especially when public utilities must make assumptions of the relationship of price and demand when they submit revised rate schedules to regulatory agencies.

By THEODORE H. LEVIN and DALE BERMAN*

THE economic concept of elasticity of supply and demand finds many applications in industry. However, the process of applying empirical data to the theoretical formulation of these concepts has long puzzled economists and statisticians.

Manufacturing corporations in pricing differentiated products must make an es-

timate of demand at various price levels; *i.e.*, they must construct a demand schedule.

Inherent in this schedule is an assumption of price elasticity of demand.

PUBLIC utilities must make assumptions of the relationship of price and demand in the submission of rate schedules to the regulatory agencies. A transportation company, in submitting rate schedules to its commission, must estimate the impact

*Small Business Administration; economic statistician, H. Zinder & Associates, respectively. For additional personal notes, see "Pages with the Editors."

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on the demand for its services of the new rate schedule. Similarly, airlines, in formulating rate schedules for their various types of service, must prepare estimates of the effect on demand of the proposed rate schedules.

In each case an attempt is made to construct demand or, as the case may be, supply schedules for the product or service involved.

AT any one time there exists a definite relationship between the market price of a good and the quantity demanded of that good. This relationship is reflected in the demand schedule which shows the number of units which would be taken off the market at each of a series of prices. By the same token a relationship exists between the market price of a good, or service, and the quantity which producers would be willing to supply at that price. This relationship is reflected in the supply schedule which shows the number of units which producers would offer at each of a series of prices.

In each case a proportionate change in price will have its reflection in the demand or supply, as the case may be. The possibilities involved are several: The amount demanded may remain the same, change proportionately or disproportionately. In the case of supply the quantities offered may remain the same despite the price change, may vary inversely, proportionately or disproportionately.

THIS degree of change in the amounts supplied or demanded in response to price changes is defined by the economist as elasticity.

For purposes of clarity, precision in the definitions of elasticity is desirable.

FOLLOWING the path pioneered by Alfred Marshall, Boulding gives us these definitions of price elasticity:

FIVE CASES OF ELASTICITY

It is customary to distinguish five important cases of elasticity.

1. A *perfectly elastic* demand or supply is one in which an infinitesimally small change in price will cause an infinitely large change in the quantity demanded or supplied. The elasticity in this case is infinite.

2. A *relatively elastic* demand or supply is one in which a given change in price will produce a finite but more than proportionate change in the quantity. A supply is relatively elastic if, for instance, a doubling of the price will more than double the quantity supplied, or if a 1 per cent increase in price will produce a more than 1 per cent increase in the quantity supplied. The numerical value of the elasticity is between 1 and infinity. Algebraically, it is between $+1$ and $+\infty$ in the case of supply, and between -1 and $-\infty$, in the case of demand.

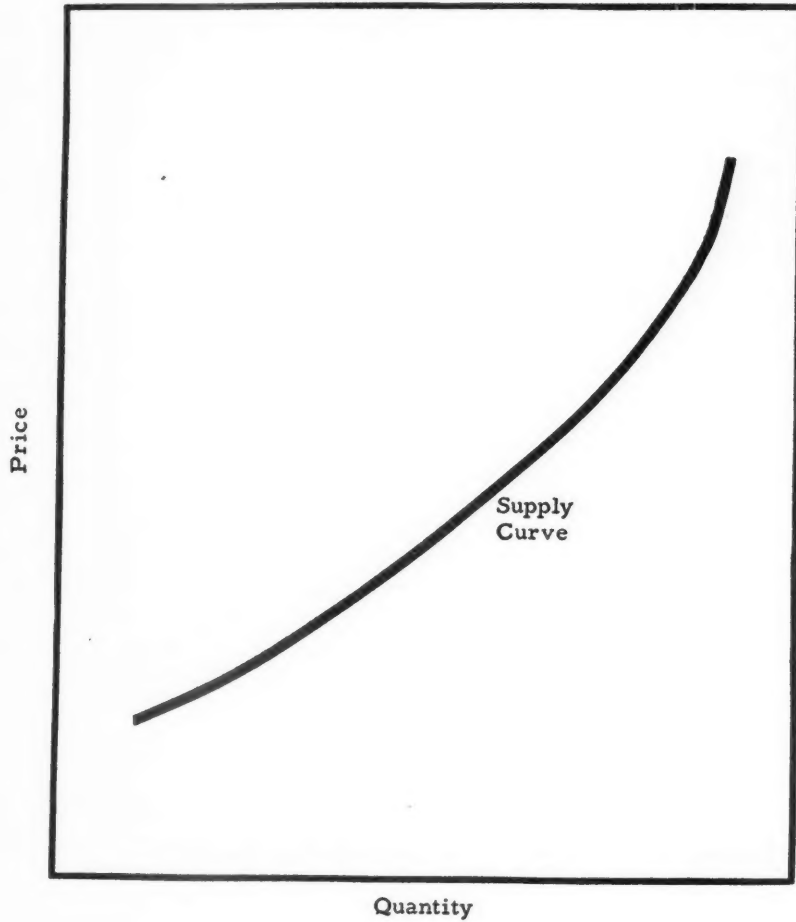
3. *Unit elasticity* of demand or supply is found where a given change in price produces an equal proportionate change in the quantity. In this case, if the price doubles, the quantity supplied will double, or if the price doubles, the quantity [demanded] will halve. A 1 per cent rise in price will produce a 1 per cent rise in the quantity supplied or a 1 per cent fall in the quantity demanded. The numerical value of the elasticity is 1. The algebraic value is $+1$ in the case of supply, -1 in the case of demand.

4. A *relatively inelastic* demand or

MEASURING PRICE-SUPPLY RELATIONSHIP FOR NATURAL GAS

CHART I

SUPPLY SCHEDULE
Relationship Between Price and Quantity Supplied



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supply is one in which a given change in price produces a less than proportionate change in quantity. In this case a 1 per cent rise in price will bring about a less than 1 per cent rise in the quantity supplied or a less than 1 per cent fall in the quantity demanded. The numerical value of the elasticity is between 0 and 1. The algebraic value is between 0 and +1 in the case of supply and between 0 and -1 in the case of demand.

5. A *perfectly inelastic* demand or supply is one in which a change in the price produces *no change* in the quantity. The quantity demanded or supplied is completely unresponsive to changes in price. The numerical (and algebraic) value in this case is zero.¹

HOWEVER, it must be stated that as with all postulations in economic theory, the models for the theory of price elasticity require certain conditions. The conditions (usually summed up in the term "all other things being equal") presume no change in other factors which might affect the relationship under observation.² For instance, the period is one of "short run," the prices of substitutes do not change, costs, both fixed and variable, remain relatively stable, technology does not change, and the proportions of joint products remain constant.

The price elasticity of supply is reflected in the supply curve which is a graphic representation of the functional relationship of supply to price. Specifically, point price elasticity of supply measures the responsiveness of supply to price within a narrow range on that curve. Arc elasticity of supply measures this relationship over a wider range of the curve. In

each case the measure is similar to but not the same as a measurement of the slope of the curve in the range under observation. The curve slopes upward (except in very rare cases) from left to right. (See Chart 1, page 3.)

WITHIN the framework of the above definitions and the economics of the natural gas producing industry and our analysis, it would appear reasonable to expect that, could price elasticity of supply for natural gas be precisely measured, it would fall approximately within the limits of Boulding's second, third, and fourth classes. It is the existence of the foregoing conditions or assumptions surrounding the economic models or concepts of elasticity which creates so much difficulty in attempting practical applications.

This is not to say that little or no work has been done in the area. Particularly in the area of agricultural commodities, numerous and sophisticated attempts have been made to relate prices to supply and demand. To mention a few, there are the works of Richard J. Foote, Marc Nerlove, and Frederick V. Waugh.³ Each of these authors provide references to related inquiries by others along these same lines.

Gas Supply to Wellhead Price

IN this article we describe an attempt to relate the supply of natural gas to the price at the wellhead. It must be recognized that there are peculiar difficulties inherent in such an analysis. For one, the supply of natural gas is partially that of a joint product situation. The nature of the product is such that a producing property is rarely 100 per cent gas or 100 per

MEASURING PRICE-SUPPLY RELATIONSHIP FOR NATURAL GAS

cent oil. Some liquids are forthcoming from the gas well and some gas forthcoming from the oil well. In addition, there are many situations where the production consists of large amounts of both liquids and gas. Thus, it becomes very difficult to remove foreign influences upon the price of the single commodity—gas.

By the same token it is difficult to distinguish clearly the short-run from the long-run periods with respect to the supply of natural gas, inasmuch as the dynamics of the industry are reflected in periodic additions to capacity.

With full realization of these conditions it is nevertheless logical to assume that price and supply of natural gas are not unrelated. Thus, logic and the fundamental economic laws of supply and demand suggest that the price received by producers of natural gas will affect the supply of gas forthcoming providing, of course, we do not exhaust our resources. This price-supply relationship will operate within a range of which the lower limit is the sum of pertinent costs per unit (pertinent costs being determined by the relative volumes of associated and non-associated gas—the two prime sources of gas) and the upper limit is the price which will result in shifts to substitutes at consumer levels. The data with which we are concerned appear to be well within the limits described above. In addition, it seems that if supply-price relationships are permitted, under regulation, to operate in a manner consistent with market realities, prices will remain within these limits.

IN other words, producers are not going to supply natural gas unless it pays them to supply it and those who have the

choice will not use natural gas if effective substitutes can be used more economically.

This analysis is borne out by this statement made by the American Gas Association:

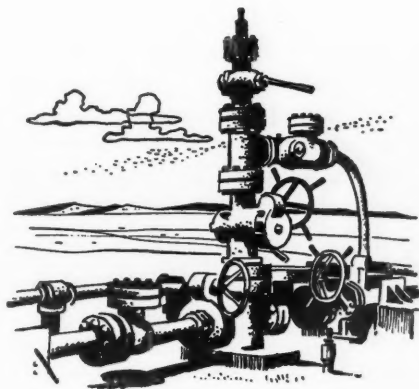
The reasoning in this memorandum assumes that appropriate economic incentives will be present to foster an accelerated discovery rate so that new supplies will become available when needed for supplying the nation's increased demands.⁴

Bruce Netschert states in his book on the future supply of oil and gas that "a continued rise in the average wellhead value will further stimulate discovery."⁵

ANOTHER statement to the point is that of Henry D. Ralph in the *Oil and Gas Journal* of July 25, 1955.

He states:

Field prices of gas will go up some whether there is federal regulation or not (almost everybody admits that regulation wouldn't stop all increases,



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and that there would be some limit with no regulation). They will stabilize somewhere above the present average at a figure high enough to induce a lot of producers to sell but low enough to induce a lot of consumers to keep on buying.⁶

A recognized authority on the oil and gas industry, commenting on the operation of the forces of supply and demand of fuels, and natural gas in particular, states: "If the three fuels were to engage in free competition on the residential level, the factors of supply and demand would soon balance out through the operation of price levels. As demand for natural gas outstripped the available supply, the price would rise until demand reached a level equal to supply."⁷

Technique Applied

IN the instant case an attempt was made to apply the statistical tools of correlation analysis to available data on the price and supply of natural gas to develop a picture of their relationship. Alfred Marshall formulated the economic measurement of these relationships. This he formulated as a corollary of his statement of elasticity of demand:

The elasticity (or responsiveness) of demand in a market is great or small according as the amount demanded increases much or little for a given fall in price, and diminishes much or little for a given rise in price.⁸

His discussion of elasticity of supply proceeds from this formulation of elasticity of demand.

In correlation analysis we deal with the association of variables which describe

the relationship between the series. We attempt to see if there is correspondence of movement, a "going togetherness" or a concomitant variation between the series.

To measure the degree of relationship between two or more variables, we must have grounds, *other than statistical*, for holding that the variables are interconnected in nature or society.⁹

* * * *

The existence of correlation between variables does not necessarily mean that one is the cause of the movement in the other.¹⁰

GRAPHICALLY a simple correlation, one in which we compare two series, may be portrayed in a scatter diagram. (The term scatter refers to the dispersion of the dots on the graph.) (See Chart II, page 7.)

A systematic scatter, one which forms a path, lends itself to regression line techniques.

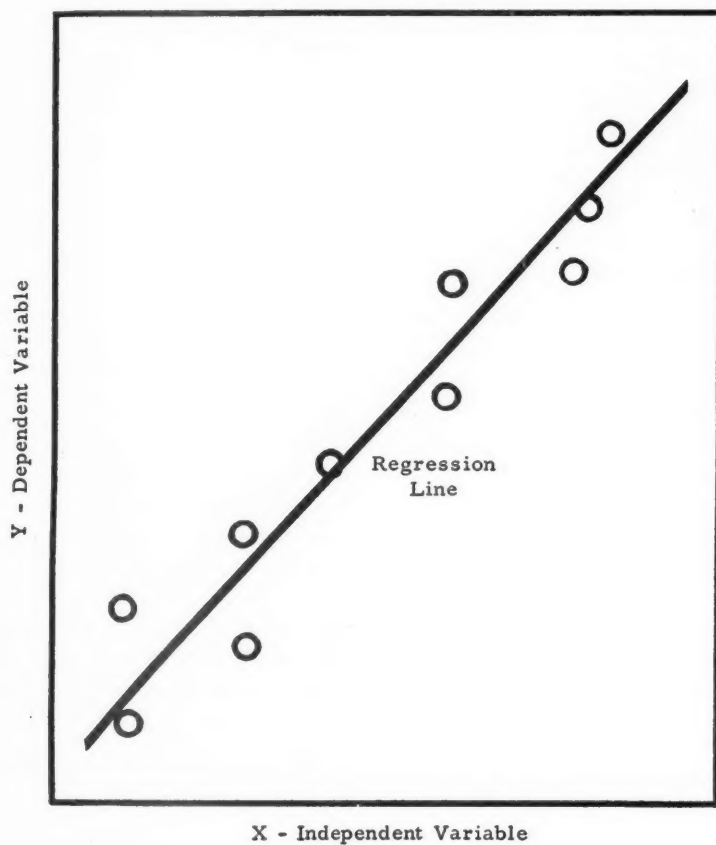
The regression line may be defined as the line of average relationship, describing the average relationship between two variables for the entire period measured.¹¹

At this point the similarity between the *b* value or slope of the regression line, and the definition of elasticity should be noted as well as the similarity between regression curves (which slope upward to the right on arithmetic scale and appearing as a straight line on logarithmic scale) and supply curves. The aforementioned conditions of the economic model of price elasticity of supply should be borne in mind when using logarithmic regression lines dealing with price-supply relationships.

MEASURING PRICE-SUPPLY RELATIONSHIP FOR NATURAL GAS

CHART II

SCATTER CHART
Relationship Between One Dependent Variable and
One Independent Variable



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THE degree of covariation is expressed by the correlation coefficient:

The coefficient of correlation r is an abstract number or a pure number; that is, it is not expressed in units of a variable like number of dollars or number of union members. It is an abstract number which measures the degree of relationship between two variables.¹²

The coefficient of determination, r^2 , tells us how successful we have been in explaining, "the relationship between two variables." "Thus the coefficient of determination helps us to decide whether it is necessary to look for additional determinants."¹³

We may use the slope of the line of regression as a rough approximation of the coefficient of elasticity (see footnote 11), bearing in mind the aforementioned conditions. A slope with a value greater than 1 would suggest relative elasticity; a value of 1, unit elasticity; a value of less than 1, relative inelasticity. Extreme values in these cases are not realistic.

Values of the coefficient of correlation, range from -1 to $+1$. The closer the approach to either extreme the greater the covariation. A -1 value for the coefficient of correlation would indicate a perfectly inverse correlation, and a $+1$ value designating a perfectly direct correlation.

The Statistical Analysis

THE following tables present various relationships between price and supply, none of which represents the classic economic model. In all cases the statistical techniques were applied to the logarithms of the measure of price and the measure

of supply. As previously noted, this methodology indicates the rate of *change* in one variable related to the rate of *change* in the other variable.

The first two tables (page 9) represent correlation studies of total reserves as of the end of the year related to price. Computations were made on both well-head prices (as supplied by the Bureau of Mines) and prices paid by pipelines (supplied by the Federal Power Commission) for the United States.

In each case the correlation shown in the first column is greater than 0.93 which indicates a very high degree of covariation; in other words, a very high degree of relationship between prices for natural gas and the supply of natural gas. The second column, in each case 87 per cent or over, suggests that 87 per cent or more of the variation in supply can be explained by price.

In the next series of computations an attempt was made to determine the degree of relationship existing between gross additions to reserves and the aforementioned price series.

THE results when we use gross additions to reserves instead of year-end total reserves are significantly different. In this case the correlations for the United States are relatively low as are the indications of the degree of variation explained.

The explanation of this disparity will perhaps weaken the usefulness of gross additions to reserves as a measure of the relationship in which we are interested. The nature of gross additions as a statistical series precludes their usefulness in this analysis. This is due to the fact that the price data are an average of price over

MEASURING PRICE-SUPPLY RELATIONSHIP FOR NATURAL GAS

RELATIONSHIP BETWEEN YEAR-END RESERVES AND PRICE DEFLATED BY THE BLS WHOLESALE PRICE INDEX

<i>Year-end Reserves and:</i>	<i>Degree of Correlation¹⁴ (Maximum Value Is 1)</i>	<i>Change in Supply Explained By Price¹⁵</i>
United States—Wellhead Prices	0.9326	87%
—Pipeline Prices	0.9577	92%



a period of a calendar year, whereas the gross additions are a cumulative total reported at the end of a year.

Because of the questions raised, a somewhat different method was tried in the next series of computations. In this case recognition was given to the economic fact that price changes in one year will have effect on production in later years because it takes time to affect the investment and the new producing facilities.

Although admittedly introducing a "long-run"¹⁶ implication, realistic analysis of the industry would assume that the level of current prices would affect the level of supply at a future date rather than conversely affecting supply before that price. Therefore it appears appropriate to use a one-year lead in price. In this analysis the price in one year was related to the supply for the following year, price being the "lead" series. (See table, page 10.)

IN this case the results are more uniform than in the previous group. Using the lead we get a correlation of over

0.77 in each case and relatively high explained changes.

ADMITTEDLY, the difficulty in using correlation analysis to study the relationship between price and supply is the myriad of other influences which can affect supply, even though in our opinion price is the most important. For this reason an attempt was made to introduce at least one of these variables into the analysis to measure its influence on the relationship. In this case the average total cost of drilling per foot was related to average wellhead price and the result correlated with gross additions to reserves. To an extent the price series has been converted to a price incentive series, which is then related to gross additions. This gives recognition to the fact that increased prices are not alone an incentive to increase supply unless they result in maintained or increased margins.

The correlation shown in this case, 0.87, reflects a high degree of covariation between additions to supply and a measure of price incentive. The degree of



RELATIONSHIP BETWEEN GROSS ADDITIONS TO RESERVES AND PRICE DEFLATED BY THE BLS INDEX OF WHOLESALE PRICES

<i>Gross Additions to Reserves:</i>	<i>Degree of Correlation¹⁴ (Maximum Value Is 1)</i>	<i>Change in Supply Explained By Price¹⁵</i>
United States—Wellhead Prices	0.5696	32%
—Pipeline Prices	0.5989	36%

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RELATIONSHIP BETWEEN GROSS ADDITIONS TO RESERVES AND PRICE DEFLATED BY THE BLS INDEX OF WHOLESALE PRICES WITH A ONE-YEAR LEAD IN PRICE

Gross Additions to Reserves:	Degree of Correlation ¹⁴ (Maximum Value Is 1)	Change in Supply Explained By Price ¹⁵
United States—Wellhead Prices	0.8646	75%
—Pipeline Prices	0.7722	60%

variation in supply which can be explained by the price incentive is 76 per cent. The slope of the regression line, 1.547, could be interpreted as suggesting a relatively elastic supply curve.

WHILE it must be admitted that it is impossible to determine the price elasticity of supply of natural gas in the precise use of that term, and it is conceded that correlation studies show de-

grees of covariation and neither elasticity nor cause and effect, nevertheless, the high degree of covariation between price and supply and the similarity of the regression line to a supply curve reflecting positive elasticity cannot be ignored.

The similarity of the results of this exercise to the opinions of the industry experts on price supply relationships of natural gas suggests the feasibility of further experimentation.

Footnotes

¹ "Economic Analyses," by Kenneth E. Boulding, third edition, Harper & Bros. New York, 1955, p. 120.

² These factors are reflected in the market. The market assumption on which the theory of elasticity rests is one of pure and perfect competition, the conditions for which include: many sellers; many buyers; no one seller or buyer accounting for a quantity sufficient to influence supply or price; complete information on market conditions available to all buyers and sellers; adjustments of market conditions automatically reflected in price; product units of all sellers indistinguishable in quality or identification; freedom of entry and exit of suppliers and buyers in the market.

Such a market is an ideal; in reality no markets approach this ideal. This, however, does not undermine the effectiveness of the elasticity concept as an analytical tool. It does, of course, reduce the precision of its application.

³ "Analytical Tools for Studying Demand and Price Structures," by Richard J. Foote, United States Department of Agriculture, Agricultural Handbook No. 146, August, 1958.

"Distributed Lags and Demand Analysis for Agricultural and Other Commodities," by Marc Nerlove, United States Department of Agriculture, Agricultural Handbook No. 141, June, 1958.

⁴ "Graphic Analysis in Agricultural Economics," by Frederick V. Waugh, United States Department of Agriculture, Agricultural Marketing Service, Agriculture Handbook No. 128, July, 1957.

⁵ Cites on p. 77, Bruce Netschert. "The Future

Supply of Oil and Gas," Johns Hopkins Press, 1958.

⁶ Op. Cit. p. 101.

⁷ P. 165.

⁸ "Economics of Natural Gas in Texas," by John R. Stockton, Richard C. Henshaw, Jr., Richard W. Graves. Bureau of Business Research, College of Business Administration, University of Texas, Austin, 1952, p. 277.

⁹ "Principles of Economics," by Alfred Marshall. Macmillan & Company, London, eighth edition, 1946, p. 102.

¹⁰ "Basic Statistics," by George Simpson and Fritz Kafka. W. W. Norton, New York, 1957, p. 350.

¹¹ Ibid.

¹² "The major practical use of the regression line is an estimating line. The estimating line is fitted by means of an estimating equation, $Y_0 = a + bX$." (Ibid, pp. 356-7, footnote 9.)

—in which equation the b value represents the slope of the line or the change in the Y variable divided by the change in the X variable. In our analysis we used the estimating equation $\text{Log } Y_0 = a + b \text{ Log } X$ in order to put our data into the relative terms demanded by the definition of elasticity. The use of logarithms places the b value (or slope) in terms of the rate of change in the Y variable divided by the rate of change in the X variable.

¹³ Ibid, p. 364.

¹⁴ Ibid, p. 367.

¹⁵ Coefficient of correlation.

¹⁶ Coefficient of determination.

¹⁷ "Long run" to the economist indicates a period long enough to permit additions to capacity.

The Growth of Telephone "Salesmanship"

The telephone industry has set up a sales department. And is searching out and training latent sales ability, from the installer at the door, clear back to the "lab." Most of the tried-and-true promotional methods work well for Bell and non-Bell.



By JAMES H. COLLINS*

AMONG the good questions going around today is that one put to sophomores: "When you leave college, what do you want to do—what do you want to become in life?"

Really, what a question to put to these nice, serious kids, lately out of the bang-bang phase, with so little experience of life to go on. And what answers! You may have sophomores of your own.

Among their answers, these youngsters specify things they do not want to do, or be. They do not want to go into Dad's business, or profession. They are certainly not going to be mere money grubbers. They want to be poets, statesmen, painters. At least one Dad in ten has lived through this phase, and now Junior is in law, or industry, or trade, and coming on fine, a maturing executive.

Many of these youngsters are determined to have nothing to do with selling.

That stands high in their answers. And, suddenly, their distaste for "huckstering" is important in the telephone business, where many of them will land their first jobs.

THE sophomore concept of selling is sketchy. It is pictured as ringing doorbells, or working behind a counter, or standing up to tough purchasing agents. That they possess sales ability, that selling has a large element of teaching, that it has a striking likeness to judo—these are things they will learn in telephone jobs, many turning out prime producers. Some will not have what selling takes, yet as technicians will be indirectly engaged in selling.

Sophomore prejudices will not figure at all.

Nothing to Put Up in a Package

SALESWISE, the telephone business is peculiar. For seventy-odd years it got

*Professional writer, resident in Washington, D. C. For additional note, see "Pages with the Editors."

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along, grew great, without a sales department, while other businesses were cultivating the arts of persuasion to what they are today.

Advertising in Bell's day was associated chiefly with patent medicines, plug tobacco, and beer, the chief medium billboards. Retail chains grew out of drug and cigar stores, brewers' owned saloons, Madison avenue was a street where the best families lived.

THE telephone business had nothing that could be wrapped up in a package and sold in stores. It sold a service, for which the company provided everything needed, installed and maintained it, at an officially fixed rate. Nothing to buy! Any color so long as it was black! Any place on the wall for the telephone!

Ingenious inventors tried to develop a sort of appliance business in telephony, contriving attachments for convenience, privacy, whatever subscribers could be persuaded made the service better. The telephone company took these attachments off.

In France, this idea had more success. Perhaps because French telephone service was far behind our own. The French subscriber was lucky to get a line, and often had to buy his own set, and so had some choice, and among the different instruments was the one-handed "French phone." Americans coming back from Paris wondered why our telephone people did not see the advantages of the French set. As a matter of fact, they did, and used it themselves. It became a symbol of company status, like more than one phone on the desk, until released to the public.

The times were not ripe.

THE other day the Bell system gave a new name to one of its oldest departments. In the days when engineering, plant, and operating were being developed, there arose transactions that the technical men could not handle very well—accounting, billing, collections, subscriber complaints, dealings with people. These were lumped together into a new department, and given the appropriate title of "commercial." Along with its other activities it handled advertising and sales, as they were understood then.

This has now become the sales department, with sales directors, merchandising vice presidents, and promotional "brass" new in telephony. It is charged with finding, hiring, and training sales ability wherever it is to be located. Particularly, it inculcates the new sales policy, or philosophy, or creed of the industry. Both Bell and independent executives spell each other in conferences, conventions, and clinics, setting forth to telephone employees the reasons why they have to sell.

"Sellingia" Really Job Insurance

THE telephone business today bears comparison with the railroads in the era when they were the chief form of transportation, carried the passengers and freight, had no premonition of competition from the internal combustion engine, much less the airplane.

Up to war's end, telephony enjoyed a comparable position. People could mail a letter, or call a boy, but the easiest and fastest thing was to telephone. Today, there are new boys eager to carry a message. The industry is in competition with them, and with its own backlog. The postwar expansion of subscribers, plant, investment, has set a pace that has to be

THE GROWTH OF TELEPHONE "SALESMANSHIP"

maintained, and increased, a liability that is being pictured to telephone employees.

For an illustration, toll traffic. It makes up around one-third of both Bell and independent revenue, the rest being local traffic. There are complexities of rates, and accounting for toll calls that pass over several lines, but both divisions of the industry promote it, because they need the revenue.

TOLL circuits are expensive, must be kept earning money as many hours in the day as possible. They have idle hours in the day, idle days in the week. Selling traffic in those times, by special rates and the arts of persuasion, is a means of adding revenue. Residential toll traffic is promoted on family feeling—heart throbs. Commercial toll traffic offers business something less expensive than time, travel, expense accounts—brass tacks.

Suppose there is a recession. Toll traffic undoubtedly would be one of the first household and business expenses cut down. What would be the effect on telephone jobs? Except in the great depression, telephone employment has experienced few setbacks. Even its automation, which began early, and has gone much further than in other industries, has not been very real to employees. Change of pace in new hirings has made the necessary adjustments. Nevertheless, recession and unemployment are understood in this business no less than others.

For the Installer, the Ice Is Already Broken

TELEPHONE selling began with doorbell ringing, that aversion of the

sophomore. But it was not cold turkey. The installer and trouble shooter were chosen, because they already rang doorbells, by work ticket, paying no attention to the house next door. They rang once, like Senator Ingalls' "Opportunity," but did call back if there was nobody home. They were expected, the installer bringing the phone long awaited on backlog, the repair man to get service going again.

WITH the advent of color, these employees' subscriber standing was put to work. In precolor days they were likely to ring long and loudly, rap on the door with a screw driver when there was a delay. They were taught to ring gently, not too long, to give their names, as telephone men, when the housewife answered, and to step back a couple of paces while she waited, to show that she controlled the situation. If round-eyed youngsters came to the door with their mother, watched tools being laid out, work started, asked questions, they were icebreakers. The telephone men probably had kids of their own.

"That telephone isn't black like the people's next door—why is that? Will



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our phone be red? Is a red phone better to talk into?"

THESE employees were not burdened with any sales tactics. While color was still new, not yet available everywhere, and people had only read about it, the installer and repair man were told to carry a couple of color sets along with their other gear, saying nothing about them. Their novelty started them off in the A B C's of selling.

Where is the new phone to be put? That brought up the question of matching decorations. Perhaps the living room décor, furniture, floor coverings, and draperies, had been planned and carried out over several years, the housewife saving, watching, waiting—and here, instead of the jarring black phone, are color sets to match, the obliging installer holding them up to show the effect.

Where will the phone be most convenient, private? How about placing it to be close at hand for safety in an emergency. There are long cords, spring coils, loud and soft ringing sets, the upgrading of party lines, many additions to basic service, that may need only explanation to sell, subscribers having not yet heard about them.

This sales angle, added to the installer's and trouble shooter's routine, soon discloses sales ability in different degrees. Some of them stand out as producers, others do well, still others do not have the knack.

A conversation between two installers illustrates the difference.

"People in that district are not customers for color or extensions," says one. "You can tell by the rents."

"Look at their television sets," says the

other. "How do the instalments compare with the telephone bill, the smallest item in the family budget? Let them decide what they can afford—some of them will buy even if they can't afford it. Let the credit department settle that point."

WHAT is sales ability? Why is one individual a good producer, while another could not sell \$5 bills for a nickel? Are sales people born, or can they be trained? How can this kind of ability be spotted and put to work?

Management has wondered, and psychologists have tried to help them with hiring tests.

One yardstick thought to be important is intelligence. A sales person must have savvy, but it is also argued that he need not have a very high IQ. He is gregarious, likes people, understands how to influence them—too well, in the blue-sky categories. He works for quick results, the signature on the dotted line, has no patience with technicalities. He is an extrovert, and as psychologists quip, "You can always tell an extrovert, but you can't tell him much."

In contrast there is the introvert, with the mathematical and scientific turn of mind, not at home with people, absorbed in research problems, finding no satisfaction in sales achievement.

Telephone organizations abound in introverts and they are among the best sales material found by the cut-and-try methods by which the industry is developing its new promotional people.

The German Hausfrau Answers the Door

TAKE the new boy in his first job, on the bottom rung in some telephone

THE GROWTH OF TELEPHONE "SALESMANSHIP"



department. Just out of college, there will be clues to potential sales ability in his application, or hiring interview. He put himself through college by such jobs as waiting on table, tending a string of furnaces, manual labor on a construction gang—never any kind of selling job. He is strongly prejudiced to selling, wants to have nothing to do with it, considers it economically wrong. He has had no experience of selling, thinks of it as doorbell ringing, the kind of tricky jobs offered in "Help Wanted" columns.

ANOTHER fresh hiree will have had a newspaper route as a kid, will have sold greeting cards, books, various kinds of merchandise from door to door, filled Christmas jobs in stores, built up a laundry agency, solicited advertising for the college magazine, taken hold of its circulation department.

An enormous volume of selling is done door-to-door, and a great deal of it by young people, who gain experience that way, and later in life may prefer to be in business for themselves, make money according to their industry, in their own hours, build up their own clientele of

customers. Manufacturers of door-to-door merchandise create status for them by national advertising, stress the point that their goods are sold only this way.

IT is one of the basic methods of selling created in this country, such as mail order, open shelves, and coin machine selling. Many of the sales people who follow it like the cold turkey angle, ring doorbells on averages, so many calls, 50 or 100 to a sale, no unpromising house passed up, because that may be the one that buys. It is a kind of selling in which women find employment, notably in toiletries.

Just now, the German hausfrau has waked up to the value of appearance. Traditionally she has always considered cosmetics as something for hussies, wasteful, even unhealthy. But Hollywood and American women living at foreign bases have overcome these prejudices, the young German women are dolling up, American cosmetic makers are getting export trade, opening European branches—and it is found that door-to-door selling is as much a part of the toiletry industry over there as here at home.

PUBLIC UTILITIES FORTNIGHTLY

Subscribers Vote on Every New Device

TELEPHONE promotion is being built up on a solid foundation of preselling, which may be compared to judo. Long ago the Japanese worked out self-defense tactics to utilize an opponent's own strength to repel him. The individual attacked may not be as strong as the attacker, but with training the latter's brawn can be used to topple him. The bigger and uglier he is, the harder he can fall.

Preselling utilizes the prospective customer's tastes, desires, and even his profit sense to break the ice for the installer and novice. From color sets, extensions, and other residence improvements, to advanced business installations. Hundreds of new ideas are constantly being evolved, in the laboratories, plant, operating, and other departments. Some are engineering ideas, others arise from subscribers' needs. These ideas are put through a fine mesh screen, many discarded on obvious defects. Those found promising are tried out in pilot form, on interoffice scale, and, if carried forward, are put into service in some test area, for a "vote" of subscriber acceptance. In the end, perhaps one in fifty or more goes into general service.

How far Bell goes in preselling is shown in the wonders-of-science publicity now coming out of the laboratories. It may be years before international messages are bounced off satellites, or the moon, but eventually the enormous plant investments will have to be made to pay with traffic. Such preselling looks to that day, and meanwhile keeps in the limelight Bell progressiveness in improvements that will be available sooner.

JULY 6, 1961

Applying the Methods of the Great American "Drive"

IF satellite communication were realized today, it would rear another tower of Babel. Only in narrow limits would people speak the same language. So, scientists are already working on automatic translating equipment, along with devices for turning spoken messages into written form, and vice versa. By the time a man reaches the moon, whatever his language, he may be asked, "How's the weather up there?" and in whatever language his reply, it will be understood on earth, perhaps by multitudes: "Lousy!"

Both Bell and General are preselling through their advertising, stressing growth in financial terms, and in new equipment and services, and finding public response in the desire to have what is better, more modern. On the principle of carrying color sets into the home, there has been built up a national demand for the "Princess" type set. Marketing and merchandising specialists agree that in America—and in many areas abroad—there is a "new market" that not only wants improvements, but is in many ways lifting itself out of the "mass" and into the "class" and luxury levels. Telephony is selling successfully in this market of the 1960's.

ANOTHER tried-and-true sales mechanism being widely applied by telephone companies is that American institution, the "drive." It is solidly fixed in our way of life. Really, a kit of tools for influencing people to sign up, ready for use by telephone employees.

A little perspective on the drive is helpful.

THE GROWTH OF TELEPHONE "SALESMANSHIP"

In 1917, after fifty years, the American people woke up to the fact that they had another war to finance. Instead of the few bankers who had raised money for the Civil War, there would have to be mass financing, with Liberty bonds, in low denominations, within the means of everybody.

A bond in that era was a mysterious thing, in \$1,000 values, bought by the rich, left in their estates, not for plain people.

But now the term "a people's war" was heard, and bonds brought within the reach of everybody, and the sound principle of the camp meeting, the "revival" was put to work. Bring people together, for conversion to religion, or a political cause, and they warm each other up, lose sales resistance, become pliable in the orator's and revivalist's hands.

The revivalists for this drive were volunteer salesmen drawn from life insurance, advertising, and other fields. They were dubbed "Four-minute Men," an adroit title, assuring a hearing from a theater audience or a group of workers at the lunch break.

WHAT they asked for was pledges from the audience for the purchase of bonds. "Go to your bank tomorrow and buy a bond for fifty or a hundred dollars." The idea of tying bonds to pay checks was still in the future. Not one in twenty listeners had a bank. But any bank would sell them, in any denomination, and provide safekeeping for those who had no safe-deposit box—which was also one in twenty.

The excitement of bidding entered into this kind of selling, the war was financed, and the government has never

since been without bonds to sell, and never will be.

GOVERNMENT bonds have long become part of modern thrift and security, along with group life insurance, company and other pensions, and fringe benefits. The public is conditioned to drives, as contributors and participants. Out of the bond technique developed community chests and research foundations, and the Four-minute Men learned much, and developed a new industry—professional money raising.

This whole kit of tools is ready at hand for telephone selling, by all employees, whether or not they have subscriber contacts in their work. Installers and trouble shooters are hardly a handful, compared with the construction, field, plant, and operating people who, lined up in a drive, will become producers and recruits for more professional selling.



PUBLIC UTILITIES FORTNIGHTLY

No Possibility for the One-cent Sale

THE first step in organizing is to impress everybody with the fact that there is a war on. Competitive forms of communication are after that economic prize, a larger share of the consumer dollar. On a pie chart, the telephone sliver is modest, but ought to be more, in view of the postwar investment on which revenue has to be earned. Added revenue is to be found by selling the new improvements in household service, and business facilities. Added revenue is needed by smaller companies in the phase of conversion to dial.

All of which comes down to telephone jobs. Apart from what may come in the way of recession, every sale of color, or extensions, makes work for several employees. The installer who upgrades a subscriber from a party line writes a work ticket for the warehouse or construction men, and the chief operator who sells a kitchen extension for convenience, or a bedroom phone for safety, makes work for others, all of which adds up to jobs.

"Never before have we had such fine facilities for serving customers," is one angle upon which to alert the organization; "they ought to be told about them."

NOT all the tools for drives can be used by a telephone company. The gas company can set a special price for trade-ins in an old stove week, and the power company round up obsolete refrigerators. The one-cent sale, nationally advertised, is the same device, moving mountains of merchandise out of the retail stores, and free coupons, and the penny savings on staples on which the price fluctuates, like

coffee, and the law of demand and supply can be seen in operation.

But a telephone company has no bargains! The premium on color, and the cost of extensions, and all other prices on its merchandise are practically fixed by regulation. So its drives have to be pepped up in other ways.

Final Exit for the Huckstering Hex

ONE effective device is the sporting angle, the contest, making the thing a game for employees. A game is interesting mostly for its scores. When everybody is sent out to sell, thermometers can register day-to-day results, or even hourly if the contest is big. The scores can be announced at a lunch, the company picking up the check. The contest may be permanent, with monthly scores posted on the employee bulletin board. There is that way of heightening suspense by holding back some sales, or large contributions, to put the drive over the top at the last minute, when every mouth has a heart in it.

But this kind of excitement is only for employees. The public may not know that there is a contest on, and some discretion is advisable in using scores as peppercorns. There will be individual star producers, and also laggards behind, and the latter may feel that they are not on the team. Scoring by departments may be preferable.

A drive has some educational effects on employees. By actually getting out to sell, they discover that selling is not what they thought it was; that they possess sales abilities they never thought they had; that selling is largely demonstrating and teaching. They like it; like its rewards.

THE GROWTH OF TELEPHONE "SALESMANSHIP"

For the fellow with the huckstering hex it is a quick cure.

THE novice in selling will soon learn that two strong helpers are working for him. One is the attraction of the merchandise itself, and the other his prospective customer's imagination.

From the first dime store with goods laid out for customers to see and handle, and fit into their own lives, merchandise has had this effect. People have dreams, aspirations, which actual merchandise helps them fit out. Selling is much harder where there is no merchandise, as in life insurance, an abstract proposition from the word "Go"!

"Oh, is that the color telephone?" was the housewife's greeting for the installer. "Well, I've decided I don't want it. I've canceled the order."

"How about seeing how it looks in the living room?" he countered.

"Why, I had no idea! We'll keep it."

Said the philosophic installer, "They never know what they want until they see it."

Fortunately for telephone selling, all the small wares are tangible, and can be shown in displays. Utility selling has this advantage, the electric house, the all-gas kitchen, and the completely equipped telephone house are on the same beam.

None Too Big, None Too Small

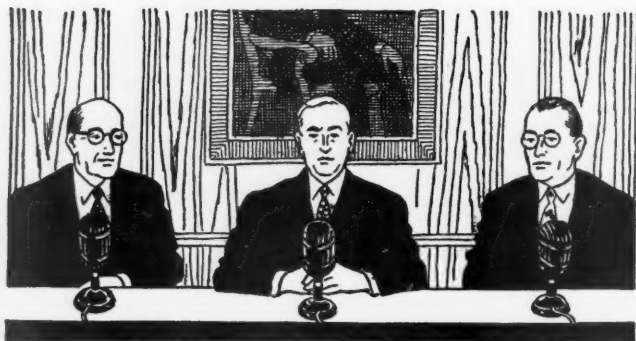
LARGE Bell companies maintain that they have as many sales people as employees, and truthfully, if sales potentials are counted in all departments. There is some feeling among small non-Bell com-

panies that a sales program is not possible, but a recent market test by a small company shows that the possibilities and the people are there.

This company is located in a town of 7,000 population. During the test period its employees made 1,436 subscriber contacts, one sale for each three contacts, selling 36 different items of equipment to residence and business subscribers, adding \$11,020 to the yearly revenue, according to R. Parker Sullivan, General Telephone merchandising vice president.

Color sold well (77), and extensions (83), but the best seller was a surprise—upgradings from party lines (112). This presumably was due to more circuits being available in modernized plant, but it is on the beam with Bell system statistics. Bell has been upgrading for ten years, from one in four party-line residence subscribers to the present two in five. Various types of set sold well, loud and soft ringing, sound booster, switch keys, and to business concerns industrial horns, electronic secretaries, and enlarged wiring plans. Another item in good demand was extra listings in the directory, added home or office listings, and others ordered by members of a growing family, room and apartment tenants.

MOST significant surprise to employees participating in the test was the general public interest in improvements, and even appreciation of the opportunities to see them, have them demonstrated. The attractiveness of the merchandise works today as it did for Woolworth. Also, employees lost all doubts about the ability of subscribers to buy what they wanted.



Cost of Debt for Rate of Return

It has been found in a study on the practices of state utility regulatory commissions that a large percentage of the respondents using a cost-of-capital approach to an allowable return relied heavily on imbedded costs in determining the cost of debt capital.

By ROBERT G. TOWERS*

A SURVEY recently conducted by Martin Toscan Bennett Associates of Washington, D. C., on the practices followed by state utility regulatory commissions revealed that 66 per cent of the respondents using a cost-of-capital approach to an allowable return rely heavily on imbedded costs in determining the cost of debt capital. Letters of inquiry were sent to 49 states, the District of Columbia, and the Puerto Rico commissions, and 47 replies were received.¹

Only 44 of the responses are covered

*Member, Martin Toscan Bennett Associates, Inc., Washington, D. C. For additional personal note, see "Pages with the Editors."

¹Alaska has no commission. The Illinois, Kentucky, Nebraska, and Vermont commissions did not respond. Recent decisions reveal that the Illinois commission has considered both imbedded and current costs (27 PUR3d 209, 226); the Kentucky commission, after considering future capital requirements, used imbedded costs (36 PUR3d 401, 404); and a Vermont commission precedent provides for the use of imbedded costs (35 PUR3d 100, 112). We have been unable to determine practices of the Nebraska commission.

in the accompanying tabulation. Forty-one were explicit, falling easily into three categories: (A) those utilizing exclusively imbedded costs of outstanding funded debt, (B) those utilizing imbedded costs for existing debt and current costs for increases contemplated for the immediate future, and (C) those utilizing both imbedded and current costs. These are hereafter referred to as Groups A, B, and C.

However, five state commissions in generally worded replies indicated that either they (1) have no fixed policy as to debt costs allowed,² (2) consider all aspects of the cost of money,³ or (3) generally do not use a cost-of-money approach to a fair return.⁴ After reviewing the opinions and decisions cited by those commissions, Colorado, Maryland, and

²Colorado and Maryland.

³New York.

⁴Connecticut and Minnesota.

COST OF DEBT FOR RATE OF RETURN

New York were included in Group C. Iowa was not included in the tabulation because its commerce counsel indicated that no regulation is imposed on the public utilities of that state at the present

time although a bill was before the legislature to provide such regulation.

THE 15 commissions in Group A indicated that they consider imbedded



TREATMENT OF DEBT COSTS BY STATES

A. Only Imbedded Costs of Outstanding Funded Debt Considered

<i>Commission</i>	<i>References</i>
1. California	99 PUR NS 242; 99 PUR NS 272
2. District of Columbia	Order 4468, July 22, 1958, Washington Gas Light Company
3. Florida	Order 2811, Docket 5364TP Order 2875, Docket 5866TP Orders 2741 and 2741-A, Docket 5509TP Order 2627, Docket 5274EU
4. Georgia ¹	Order at Docket 641-U, November 15, 1954, Atlanta Gas Light Company
5. Hawaii	34 PUR3d 556
6. Idaho ²	33 PUR3d 88
7. Louisiana	34 PUR3d 78
8. Michigan ³	
9. Nevada	Southern Nevada Telephone Company
10. New Hampshire	Docket R-3624, New England Teleph. & Teleg. Co.
11. New Mexico ⁴	22 PUR3d 212
12. North Carolina	33 PUR3d 398; 34 PUR3d 1
13. Ohio ⁵	35 PUR3d 392
14. South Carolina	No recent decisions
15. South Dakota	Report and Order F-2628, November 22, 1960, Northwestern Bell Telephone Company

¹ Short-term debt currently outstanding included at cost to issuer.

² Short-term debt included at current cost of outstanding notes.

³ Recognition generally given to notes payable as part of debt cost.

⁴ Short-term debt included at actual cost where utility constantly has such borrowings in substantial amounts.

⁵ Imbedded cost rate is applied to debt portion of reproduction cost new less depreciation rate base.

B. Imbedded Costs on Outstanding Funded Debt and Current Costs for Imminent Additions Considered

<i>Commission</i>	<i>References</i>
16. Alabama	31 PUR3d 254; 25 PUR3d 257
17. Delaware	No recent cases
18. Kansas	Order at Docket 60,800-U, May 27, 1960, Southwestern Bell Telephone Company
19. Maine	29 PUR3d 113
20. Montana ⁶	Mountain States Teleph. & Teleg. Co. March, 1960
21. North Dakota	24 PUR3d 62
22. Oregon	32 PUR3d 497; 34 PUR3d 36
23. Rhode Island	21 PUR3d 113; 21 PUR3d 178
24. Tennessee	
25. Utah	23 PUR3d 125
26. Virginia	No recent decisions on these points
27. Washington	Decisions do not reveal relevant points
28. West Virginia	Decisions do not reveal relevant points
29. Wisconsin	43 PSCW 352, Wisconsin Electric Power Co.; Wisconsin General Telephone Co.—1960

⁶ Short-term debt included at actual cost.

(Continued)

PUBLIC UTILITIES FORTNIGHTLY

C. Both Imbedded and Current Costs Considered (No Specific Weightings)

<i>Commission</i>	<i>References</i>
30. Arizona	No recent decisions
31. Arkansas	
32. Colorado ⁷	34 PUR3d 186
33. Indiana	Order at Docket 28524, January 20, 1961, Muncie Water Works Company
34. Maryland ⁸	22 PUR3d 321; 24 PUR3d 247
35. Massachusetts	Order at Docket DPU 12899, August 14, 1959, Boston Edison Company
36. Mississippi	
37. Missouri ⁹	Decisions do not reveal relevant points
38. New Jersey	Decisions do not reveal relevant points
39. New York ¹⁰	
40. Oklahoma	Decisions do not reveal relevant points
41. Pennsylvania	Order at Docket C 17033, September 28, 1959, South Pittsburgh Water Co.; 28 PUR3d 413; 14 PUR3d 438
42. Puerto Rico	Order of February 27, 1959, Puerto Rico Telephone Company
43. Texas	
44. Wyoming	Order at Docket 9343, November 7, 1960, Mountain States Teleph. & Teleg. Co.

⁷ The commission has no fixed policy but the references cited indicate that it generally considers both imbedded and current costs.

⁸ The response was not specific, but the references cited indicate that the commission considers both imbedded and current costs.

⁹ Imbedded costs are given double weight.

¹⁰ The commission weighs "all aspects" of all elements affecting the rate of return.



costs exclusively. The 14 in Group B stated that they consider current as well as imbedded costs but explained that current costs are considered only in relation to increases contemplated for the immediate future in the amount of outstanding debt, or in the portion of the capital structure to which the debt cost is applied. Together these two groups comprise 66 per cent of the responses tabulated.

The remaining 15 commissions, or 34 per cent, consider both current and imbedded costs in determining the cost of debt capital but, with one exception, were not specific as to weighting procedures.

COMMENTS relating to short-term debt indicate that where it is included in the cost of debt capital, it is generally treated in the same manner as long-term

debt. In Group A, for example, four commissions indicated that, when considered, short-term debt is included at its actual cost.

Among the commissions in Group B, comments indicated that short-term debt to be funded would be included at the funding rate. In addition, Montana indicated that all short-term debt is included at its actual cost. Arizona was the only commission in Group C to comment on short-term debt, indicating that it is included on a composite basis with all classes of debt capital.

ATOPIC not covered by the tabulation concerns the treatment given unamortized debt discount and expense on issues which are no longer outstanding. Only five commissions (Arizona, Maine,

COST OF DEBT FOR RATE OF RETURN

Missouri, Pennsylvania, and Wisconsin), or 11 per cent of those included in the tabulation, always consider these costs in calculating annual debt cost. Four—Colorado, New Jersey, North Dakota, and Tennessee—indicated that the circumstances of a particular case would determine whether they would consider these unamortized costs.

Six commissions stated that they had not ruled on the question, and five others failed to respond specifically to this question. The Alabama commission indicated that it generally does not consider these costs. The remaining 23 commissions, or 52 per cent, do not include in the cost of debt capital the unamortized debt discount and expense on issues no longer outstanding.

WHEN the actual or imbedded cost of existing debt is used in a determination of rate of return, as it is by the vast majority of the respondents tabulated in this report, interest takes on the aspect of an operating expense. In such cases, the determination of interest cost is purely a matter of observation, requiring no exercise of judgment as do other costs such as depreciation and return on equity capital.

The rate of return is, of course, affected by the weight given to debt in the composite capitalization as well as by the debt cost, but the compositing of weighted debt costs with estimated or allowed capital stock costs merely serves to obscure the critical part of the determination; namely, the rate of return allowed on equity capital.



Gas and Oil Harassed

"GAS is the only 'energy' whose price is regulated by federal law, and a very erratic, contradictory law at that, which even the Federal Power Commission and the Supreme Court do not clearly understand, although the commission and the court both have made the law. Yet, under law derived from such authority, gas occupies about the same moral status as opium. A company owning coal in the ground is free to set the price to the consumer. The lumber company manufacturing sawdust logs is respected.

"Oil is harassed by international import quotas to protect overseas investments of the big companies and the political speculations of the successive national administrations. But gas in the ground is bad, although it is the best fuel that the ingenuity of man ever sent to market. It need not be stored in bins, bunkers, or tanks. It does not make smog as oil does, notwithstanding all efforts to vindicate it by publicity and chemistry. And gas does not become a debt against the buyer until he has consumed it at the burner."

—WESTBROOK PEGLER,
Columnist.



Centralized Punched Card Billing

By J. P. BROMLEY*

The growing importance of getting a better job done in a less amount of time has motivated Consumers Power Company of Michigan to install a modern centralized punched card accounting system. The advantages in labor and time, both to the company and to its consumers, are discussed.

CUSTOMERS' billing and accounting are major responsibilities of a public utility operation today. Therefore, it is important that the jobs be done with efficiency and economy. Consumers Power Company has turned to a centralized electronic punched card accounting system to provide better service to its customers in this very important task.

In addition, the new data processing system gives customers neater, more accurate bills with more information. To Consumers' management, it gives numerous vital reports previously obtained only with costly extra effort.

Among these reports are customer sta-

tistics by type of business, type of farms, analyses by rates, and classes of customers by consumption groups.

Also, the electronic computers have proven most valuable in a variety of engineering and research studies and are currently being used approximately sixty hours per week for this purpose.

THESE studies, reports, and accounting procedures aid in continuing the growth begun in 1886 when the brothers W. A. and J. B. Foote established a small electric plant in Jackson to supply electricity for a group of street lights. The company was incorporated in 1910 and began to function as an operating utility under its present name in 1915.

*Assistant controller, Consumers Power Company. For additional note, see "Pages with the Editors."

CENTRALIZED PUNCHED CARD BILLING

TODAY, Consumers Power serves an area of 28,740 square miles in 64 of the 68 counties in the Lower Peninsula of Michigan. It supplies electric and natural gas service to approximately 1.2 million customers with 1.4 million meters. About 16 per cent of these customers use both gas and electricity. Electric service is supplied in 1,513 cities, communities, and townships; gas service in 308.

One of the largest electric and gas companies in the United States, Consumers has apportioned its service area among 12 divisions with headquarters in Alma, Battle Creek, Bay City, Flint, Grand Rapids, Jackson, Kalamazoo, Lansing, Muskegon, Royal Oak, Saginaw, and Traverse City. Jackson is also the site of the general offices.

The centralized customer accounting system at Jackson began with the installation of an IBM 650 data processing system. More equipment has been installed on a regular schedule as additional divisions have been cut over to the new system. The cutover was completed in December, 1960. Three 650 systems are now installed; each system includes a computer with console and two on-line card read-punch units.

THE customer accounting procedure works as follows:

There is a meter read card (see Sample A, page 26) for each of the 1.4 million meters. Punched into, and printed on it, are: account number, rate code, meter location code, meter number, whether electric or gas, instruction code, previous month's reading, date of reading, consumption, customer name, and service address. These cards are filed by 21 billing districts so that a portion of

them are used each of the 21 working days of the month.

The meter reader takes the proper group of cards with him when he makes his rounds, marking the reading on the card with a special mark-sense pencil.

These cards are returned to our customer accounting section where they are run through a mark-sense reproducing punch which cuts holes corresponding to the pencil-made readings. Then the meter read cards are matched with arrears cards on a collator.¹ The arrears cards contain the account number and any amount owed from the previous month.

THE arrears cards, meter read cards, and blank bill cards are then fed into the 650 computer through two on-line card read punches. The computer, following the program stored on its magnetic drum, automatically produces the following output:

Consumption and gross and net amounts are cut into the meter read cards, thus converting them to "billing" cards.

Account number and gross and net amounts are cut into the stub of the blank bill card.

Then the billing cards and arrears cards are merged on the collator, match merged with the name and address cards, and run through an accounting machine to print a three-part sales register.

This register lists every customer by account number and includes all information that will be on the bill. One copy is retained in the centralized customer ac-

¹ The mark-sense equipment used is an IBM 519; the collator is an IBM 88; the accounting machine is an IBM 407. The interpreter is an IBM 557. The reproducing equipment is an IBM 519 and the stub feed reproducer is an IBM 528.

PUBLIC UTILITIES FORTNIGHTLY

counting area and two go to the proper division, to be used for reference and customer inquiries, either at the division or local contact point.

Prior to our new system, the register had no previous month's information. It was arranged by rate, and lacked many of the details of the present register, making it a much more difficult point of reference to work with.

NEXT, the name and address cards are selected from the deck on an electronic sorter and the remaining cards fed into an accounting machine with bill feed. Placed in the bill feed are the bill cards, their account numbers and due dates having been printed on them by an interpreter. The accounting machine prints all billing information on them; previous and present meter readings and meter reading dates, consumption, net amount of each service, arrears (if any), and total net. It also prints—as applicable—total gross amount, rate code, meter con-

stant, and decimal. (See Sample B, page 27.)

Then the bill cards and name and address cards are run through an accounting machine with bill feed to print the customer's name and address on the reverse side of the bills. (See Sample B, reverse, page 27.)

Most of the bills go directly to the division city post office for mailing with the sales registers and other documents delivered to the company's division offices.

AFTER the bills are mailed, the billing cards are run through a reproducer which cuts new meter cards for the following month. The data punched in the new meter read cards is printed on them by the interpreter. Along with the name and address cards, the new meter read cards are fed into an accounting machine with bill feed which prints the name and address on the meter read card.

The billing cards now become known as accounts receivable cards, since they

SAMPLE A

[illegible]

CENTRALIZED PUNCHED CARD BILLING

SAMPLE B

2205-20701		2205-20701		AUG 22 60		08 2205-20701		08	
ACCOUNT NUMBER		FUEL COST (MILLS)		DUE DATE		DIV.		ACCOUNT NUMBER	
G		NC		NA					

CONSUMERS POWER COMPANY
212 W. MICHIGAN AVE. JACKSON, MICHIGAN

NET AMOUNT	FROM	TO	METER READINGS PREVIOUS	PRESENT	ELEC - KW HRS	GAS - 100 CU. FT.	NET AMOUNT
\$ 8.58	E7-58	3939798	44				\$ 8.58
\$ 2.94	G7-58	3538253	98				\$ 2.94

TAX CL	SUBS	COMM	STN	STN	STN	STN	STN	STN	STN
6	0	0	0	1	7	0	0		
6	0	0	0	1	7	0	0		

GROSS AMOUNT ☒ REACTIVE 12.06

TOTAL NET AMOUNT 11.52

ELECTRIC RATE 04 50

GAS RATE 50

ELEC. METER CONSTANT

BILLED DEMAND

ATTER DUE DATE *AT GROSS AMT. F SHOWN BELOW

DUE DATE 1206 AUG 22

TOTAL NET AMOUNT 11.52

INCLUDES SALES TAX WHERE APPLICABLE

PLEASE RETURN THIS STUB WITH YOUR PAYMENT

have punched in them the amounts owed against which the customer's payments will be processed.

When the customer pays his bill, he returns the 22-column punched stub with it. The division offices batch these stubs and send them to our central customer accounting section where they are run through the stub feed reproducer which

cuts the information into full-sized, 80-column cash cards.

Each division's cash cards are sorted by account number, then placed in the accounting machine to print a triplicate daily cash listing.

TEN days after due date, cash cards and accounts receivable cards are

SAMPLE B, REVERSE

RETURN POSTAGE GUARANTEED

CONSUMERS POWER COMPANY
212 W. MICHIGAN AVE.
JACKSON, MICHIGAN

JACKSON MICHIGAN

FIRST CLASS MAIL

U. S. POSTAGE
PAID 3 CTS.
PERMIT NO. 43

JOHN DOE

05 2070 1 212 W MICHIGAN AVE

JACKSON MICH

05010

20700

PUBLIC UTILITIES FORTNIGHTLY

match-merged on the collator which selects out any of the accounts receivable cards not paid in full. The deck of full-payment cash cards and accounts receivable cards are run through a card proving machine which zero balances each account.

For any account not in balance, a finder card is cut, containing account number and amount of difference. It is interpreted and used to double check the appropriate accounts receivable and cash cards.

After posting cash, all unpaid accounts receivable cards are run through an accounting machine to print a triplicate trial balance.

This same deck of outstanding accounts is then match-merged on the collator with name and address cards and placed in an accounting machine to print selectively past due notices for all accounts which warrant such action based on a formula which considers both age of arrears and amount due.

THE accounts receivable cards are held in file until one day before the next month's billing. Then they are merged with any cash cards received in the meantime.

The combined deck is read into the 650 data processing system which combines all cards for a single customer and cuts new arrears cards to be used in the

new billing cycle. At the same time it considers whether a delayed payment charge should be added to the bill, acts accordingly, accumulates statistics, and balances the accounts receivable.

Our data processing system is now handling 70,000 meter read cards and 56,000 bills each day.

In addition to reductions in operating costs through this procedure, as compared with the former system of having each division manually bill its customers, the data processing system provides uniformity, accuracy, better control, and much easier access to statistics and vital reports.

OUR business report gives an itemization of kilowatt-hours and dollars for each business in our service area. For example, our farm report tells the amount of kilowatt-hours and dollar use for each type of farm customer. Bill frequency reports showing usage by rate and consumption blocks can now be prepared on a routine basis each month. In the past they were prepared, if at all, no oftener than annually and then with great difficulty and expense. They should prove invaluable in determining rate structure and for sales promotion.

Thus, our centralized data processing system for customer accounting is proving its worth daily in efficiency and economy.

Q "... the American corporation is a public rather than a private enterprise. The managers are not owners. They are professionals, functioning by systems and rules which build wealth and provide profits."

—GEORGE E. SOKOLSKY,
Columnist.

Washington and the Utilities

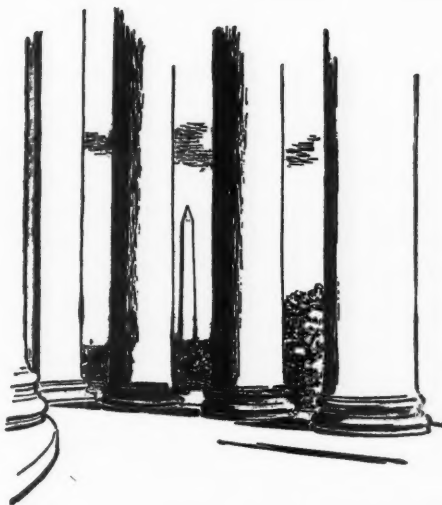
FCC and SEC Reorganization Plans Fail

THE House of Representatives, led by Speaker Sam Rayburn, one of the administration's staunchest backers, recently defeated President Kennedy's plan to reorganize the Federal Communications Commission by a 323-77 vote.

It was the first outright congressional defeat for the new administration. The outcome had been expected and the administration had already shifted its efforts to make FCC operations more efficient through legislation rather than by administrative reorganization.

The House, at the same time, voted 212 to 176 to accept the President's proposal for the Securities and Exchange Commission reorganization. Kennedy's plans to reorganize the Federal Trade Commission and Civil Aeronautics Board would be tested later. The Democratic leadership supports the measures and passage is expected.

Rayburn's break with other House Democratic leaders, the first since Kennedy took office, was voiced in one of his rare floor speeches. He based his opposition on the contention the plan went beyond the power of Executive reorganiza-



tion and repealed basic law which only Congress can do.

The reorganization of the FCC was the only plan which ran into any serious opposition in the House committees. There was little or no squabbling over the President's reorganization proposals for the CAB and FTC.

President Kennedy's program for streamlining the federal regulatory agencies suffered a second setback when the Senate vetoed (52 to 38) his reorganization plan for the SEC. No Republicans voted in support of the plan; Democrats split on it.

THESE proposals seem to be acceptable when applied to the CAB and FTC, but unpopular when considered in relation to the FCC, mostly because of a personality clash between FCC Chairman Newton N. Minow and several groups closely allied with the operation of the FCC. Minow, partly because he raised the ire of broadcasters and others in the television industry, ran into opposition from several sources. Opposition came from the broadcasters after Minow said they would lose their licenses unless they improved the quality of their

PUBLIC UTILITIES FORTNIGHTLY

programing. He called the present TV programing situation a "vast wasteland." The Federal Communications Bar Association has also spoken out against the proposals which would grant Minow broader powers. More serious opposition came from within the FCC itself, which showed itself sharply divided behind its chairman. Four FCC commissioners appeared before the House subcommittee and urged the death of the reorganization plan as it applied to the FCC.

VOICES of dissent to the President's proposals for the FCC also came from Republican legislators—and some Democrats. They have voiced the fears that if the reorganization plan for the FCC becomes effective all of its members, except the chairman, would be relegated to "office boy" status and become subservient to the Executive, and Congress would lose much of its control over the agencies.

President Kennedy's plan, in asking that each head of an agency be permitted to delegate both adjudicatory and regulatory matters to individual commissioners, hearing examiners, and other employees as the law permits, was to "relieve the commissioners from the necessity of dealing with many matters of lesser importance and thus conserve their time for the consideration of major matters of policy and planning." These changes are in line with the recent recommendations of the President's special consultant on regulatory agencies, James M. Landis.

SEC Commissioner William L. Cary and CAB Chairman Alan Boyd also appeared before the House subcommittee. Unlike the FCC, which was divided behind Minow, both Cary and Boyd said that members of their agencies unanimously support the administration's plans for their agencies. Along with the Federal

Trade Commission, they testified that the changes would provide flexibility needed to cope with increased work loads.

ASIMPLE majority vote in either house can kill these reorganization plans, but automatic approval of the CAB, FTC, and perhaps other plans may be assured simply by the failure of the committee to report them adversely. Expected to be submitted this month by the President are the reorganization proposals for the Interstate Commerce Commission, Federal Power Commission, Federal Maritime Board, and the National Labor Relations Board.

Representative Harris (Democrat, Arkansas), chairman of the House Commerce Committee, has introduced legislation to streamline FCC operation. The bill would give Minow practically all the additional powers requested by the President, except the one which would empower the chairman to delegate tasks to other commission members. Harris said he was in basic agreement with the administration that certain hearing requirements in existing laws which impede the work of the FCC should be eliminated, but he contended this was a chore for Congress, not the executive branch.

Atomic Power Developments

THE congressional Joint Committee on Atomic Energy has currently completed hearings on an administration-backed proposal to allow governmental construction of what will be the world's largest atomic power plant at Hanford, Washington. Final action on the proposal is expected this month. Capitol Hill predictions were that the Kennedy administration would win congressional approval to build the plant, but only after a fight had been stirred up by the touchy issue

WASHINGTON AND THE UTILITIES

of government ownership *versus* investor-owned power. The problem arose over whether to convert a \$145 million plutonium-producing reactor now under construction at Hanford into a dual-purpose plant capable of also generating electricity for civilian consumers.

The administration has asked Congress for \$95 million to build a 700,000-kilowatt plant that would use the heat produced by the reactor to produce electricity to be fed into the federally owned Bonneville Power Administration network in the Northwest. Charles F. Luce, head of the BPA, said that the power from the Hanford plant would go primarily to privately owned utilities in the Northwest. The power demands of public power groups, he said, can be met by the BPA's hydroelectric capacity.

AEC Chairman Glenn T. Seaborg supported the plan. He said that the plant would reach a "break-even point" in producing electricity economically competitive with conventional power in the Northwest after five years.

Opposition to the proposal by Republican committee members had been led by Representative Hosmer (California). He questioned the assumptions underlying the conclusion of economic feasibility, challenged the technological benefits that would result from the reactor, and suggested that electricity from the plant would go primarily to public power groups.

Urban Affairs Bureau Moves

LOCAL municipal officials, legislators on Capitol Hill, and officials of the Kennedy administration have all agreed on the need for an organization which would create a framework for national leadership and co-ordination in the critical fields of urban development. The accord in

views came at hearings on the administration's proposal to create a Department of Urban Affairs and Housing.

The proposed legislation would transfer five agencies of the Housing and Home Finance Agency to the new department and give it the mandate to co-ordinate other federal programs handled by other federal agencies that deal with urban areas. Housing Administrator Robert C. Weaver is regarded as the most likely man to head the new department.

The Government Operations Subcommittee has heard testimony from Budget Director David E. Bell, who presented the White House views, and Nashville Mayor Ben West. Bell, anticipating possible criticism from states worried about a reduction of their rights, said the measure would not "depart from the existing patterns of federal-state relationships in housing and urban matters, and will not change direct federal-municipal relationships where they exist."

West echoed the same views. He said that states must provide more leadership, and instead of worrying about "states' right" should think about meeting their responsibilities.

FPC Nominations Pass Senate

PRESIDENT Kennedy's two nominations to the Federal Power Commission, Joseph C. Swidler and Howard Morgan, received confirmation last month on the Senate floor. Following the confirmation of Swidler, Senate Republican Leader Everett M. Dirksen (Illinois) said that the GOP will resist all efforts by the President to appoint Swidler FPC chairman, replacing the present chairman, Jerome K. Kuykendall, a Republican. Dirksen stated that legally Kuykendall cannot be displaced and that the GOP will go to court in an attempt to block

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the President's appointment of Swidler as chairman.

There was sharp partisan debate over Morgan's fitness for the post before the confirmation passed by a 57-to-27 roll call vote. Republicans had fought Morgan's nomination because he had failed to disclose a record of college-age arrests on his government personnel forms. There was less debate over Swidler's nomination, the GOP not opposing his becoming a member of the FPC, just his being appointed chairman.

It is expected that President Kennedy will fill a commission vacancy on the expiration of Commissioner Arthur Kline's term June 22nd.

Capital Airlines Disappears

THOUGH the merger of United and Capital Airlines became an accomplished fact June 1st, opposition to the move, from other airlines, continues to hold the attention of the U. S. court of appeals. Both Northwest and Delta airlines have pending appeals before the court to overturn the Civil Aeronautics Board's approval of the merger. The airlines contend the merger creates monopolistic markets and cuts deeply into their chances for a fair profit.

A few days before the merger was to become effective, the court of appeals had declined to block the merger. Both Northwest and Delta had asked for a postponement pending thorough judicial hearing.

The two airlines in opposition admit, however, that once the merger was accomplished it would be nearly impossible to untie the knots and the chances of their pending appeal were slim. Northwest and Delta had estimated that the merger of United and Capital would take

up to \$9.4 million and \$10 million, respectively, from their annual revenues. The CAB, on the other hand, had argued their losses would be less than this, and said that the only other alternative to the merger was providing large federal subsidies to Capital or allowing it to go into bankruptcy.

Capital had been losing more than \$1 million a month and officials of the line said that if the merger was postponed beyond the June 1st date, the company would lapse into bankruptcy. The multi-million-dollar merger makes United the largest air carrier in the country. By taking over Capital's planes, personnel, and routes, United has enlarged its own 14,000-mile system into one of 21,500 miles. Instead of servicing 82 cities, it now enters 118.

Northwest Intertie

IT is expected that a study of a proposed extra-high-voltage common carrier power intertie or connecting link between the Pacific North and Southwest will be completed by November 1st. Secretary of the Interior Udall has set this as the deadline for the study being undertaken by his department. The preliminary study committee, headed by Charles F. Luce, Bonneville Power Administrator, in its report, found that, from a strictly engineering viewpoint, technology of extra-high-voltage transmission lines is sufficiently advanced so that lines up to and including 500 kilovolts can be constructed. Udall has stated that the Northwest would have a clear-cut priority on power which it requires for the development of its area and that electric power would be exported to the Pacific Southwest only what amount is termed as surplus to the needs of the Northwest.

Telephone and Telegraph



Satellite System Still in Formative Stage

THE communications satellite program still remains in a state of flux. During the past few weeks there has been a great deal of activity; however, it must be admitted that at this moment the form that a final communication satellite system may take, and just who will control and operate it, has not been decided.

Recently General Electric Company has formed a new company, Communications Satellites, Inc., which will try to arrange a joint venture by private companies to establish a world-wide commercial communication satellite system. The new group has contacted nine companies in the space and communications field with a view to discussing a co-operative plan for presentation to the Justice Department and the Federal Communications Commission. The groups contacted are: (1) American Securities Corporation, (2) American Telephone and Telegraph Company, (3) General Telephone & Electronics Corporation, (4) Hawaiian Telephone Company, (5) International Telephone & Telegraph Corporation, (6) Lockheed Aircraft Corporation, (7) Press Wireless, Inc., (8) Radio Corporation of America, and (9) Western Union Telegraph Company.

As proposed by Communications Satellites, the joint plan would permit the participation of all interested communication common carriers in the ownership and use of the system. D. T. Atkinson, executive vice president of the new company, has stated that such a plan would "prevent any one large company from securing exclusive control to the detriment of other, smaller firms."

THIS concern over who shall control the communications network is the crux of the entire matter. At the moment almost all companies agree that the nature of such a complex system demands that only one integrated network be in operation. However, just who is to control this system and how other companies are to participate still remains up in the air. That a number of companies will co-operate seems definite, since the Justice Department has let it be known that it would not permit any violation of the antitrust laws.

The Radio Corporation of America already has been selected to build an experimental relay communication satellite for the government. The National Aeronautics and Space Administration, which selected the RCA plan, will negotiate a contract of about \$3,250,000 for the

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building of the active repeater satellite. It is anticipated that the satellite, dubbed "relay," will weigh 100 pounds and will be launched into an elliptical orbit ranging from 1,000 to 3,000 miles in mid-1962.

It is understood that the RCA satellite will be used to test the durability of communications equipment in space and NASA has pointed out that this project will have no direct effect on later decisions about launching private communication satellites for commercial use.

AT&T has indicated that it plans to launch a satellite in a 7,000-mile orbit, which company officials feel is the preferable altitude for a commercial system. AT&T officials have stated that "our principal interest still is to get our experimental satellite into orbit as an essential step toward a commercial communications system. We are continuing negotiations with NASA to launch such experimental satellites for us." If the RCA satellite is a forerunner of the communications satellite system, it may be that the NASA is weighing the possibilities of satellites in lower orbits, as distinguished from fewer at higher altitudes.

NASA also announced that a bigger and stronger version of its Echo I satellite has passed its first inflation test. The new "rigidized" satellite is taller than a 13-story building and will be a "radio mirror" for long-distance bounce transmission of radio signals. Original forecasts were that Echo I would have a relatively short life in space; however, its durability has surprised a good many scientists. The new "rigidized" satellite is viewed as a further experimental step which may lead to a system of passive satellites, as well as the more complex active repeater types, such as proposed by RCA and AT&T.

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THE Federal Communications Commission called a meeting of all international common carriers and certain U. S. agencies for June 5th to explore plans and procedures looking toward the early establishment of an operable commercial communications satellite system. The FCC has endorsed, in principle, the premise that a commercial system should be owned jointly by international common carriers. The commission has stated that "some form of joint venture by the international communications carriers only is clearly indicated as best serving the public interest."

With all of the enthusiasm for a satellite system, it is interesting to note what Edward R. Murrow, director of the U. S. Information Agency, has questioned whether global TV, via satellite, will be worth the cost. Mr. Murrow has stated that the "astrocost of astrocasting" may force customers of the communications industry to be satisfied with conventional means of broadcasting words and pictures. It seems probable that TV transmission will be one of the last uses to which space communications will be put, since the pressing demand appears to be for voice and data transmission circuits.

THE FCC has already permitted companies engaged in international communications, as well as equipment manufacturers, to present their positions regarding the establishment of a communications satellite system. Earlier the commission had indicated that only the international carriers would have an opportunity to voice their views. However, this position was reversed and the so-called "hardware" companies were allowed to speak at the June meeting.

The commission is now studying the request of General Electric to reconsider

TELEPHONE AND TELEGRAPH

its previous ruling to restrict ownership of the satellite system to companies now engaged in international communications. The FCC's decision in this matter will shape the final form that the proposed combine will take, and will probably shape the future of the entire space communications project. If the commission refuses to reverse itself, all but the international carriers will be excluded.

There seems to be an effort made to assure impartiality in deciding just what should be done in this important, complex, and new field. A few of the interested parties include: (1) the international carriers; (2) manufacturers of communications and space equipment; (3) the Justice Department; (4) the National Aeronautics and Space Administration; (5) the State Department; and (6) the military. This partial list should indicate the vast complexity of the problem facing the FCC.

Proposed communication by satellite relay, on a commercial basis, forces industry and government to explore much new territory. It has been demonstrated that such a system, scientifically, is feasible. It remains now to solve technical problems, and the sometimes even more difficult administrative questions, before the program can move ahead.

THERE can be no doubt that the high level of interest in space communications will continue. The communications industry, basing its conclusions on past increases in demands for communications services, views satellites as one of the ways of gaining surety of transmission. For instance, the satellites are expected to be free of interference from magnetic storms on the sun which, frequently, knock out the radio circuits, shifting the

entire load to the cable systems. The various government agencies, from NASA, the Justice Department, and the CAB, can be expected to keep the program active. The continued "riding herd" by Justice Department on antitrust violations, may indeed stimulate industry to some real creative thinking on the establishment of a single company which will not be a violation of the statutes.

However, the final assurance that interest will remain high in this project is the President's budget request. In his extraordinary message delivered to a joint session of Congress, the President called specifically for a new \$50 million appropriation for communications satellites. There were also numerous other requests for funds for space and rocket experimentation, many of which will contribute information to the communications satellite program. There is no telling what Congress may do with the President's request for additional funds. However, owing to the present degree of interest in the entire space field, it would seem that the additional funds requested by the President for space activities would stand a good chance of favorable consideration and enactment.

Newspaper to Be Reproduced By Facsimile

IT has been announced by Bernard Kilgore that *The Wall Street Journal* will be published in southern California by facsimile transmission. It is hoped that the system will be in experimental operation early next year.

As each page of the newspaper is set in type in San Francisco, a special page proof will be transmitted by facsimile to the Riverside plant some 392 miles away.



Financial News and Comment

By OWEN ELY

President of AGA Discusses Gas Utility Outlook and Problems

THE American Gas Association made its annual appearance before the New York Society of Security Analysts on June 14th, with talks by President Lester T. Potter, Second Vice President John E. Heyke, and Managing Director Chester Stackpole. The latter's address was a humorous description of a 1971 "all-gas home." We summarize the other talks briefly as follows:

Mr. Potter expected the gas industry's annual construction expenditures in gross plant to more than double in the coming decade. This will require raising total funds from external sources of some \$10-\$15 billion, he estimated. The industry projection is, of course, based on a number of assumptions with respect to population increase, rising standards of living and higher per capita use of energy, continuing popularity of (or acceptance of) gas appliances by consumers, continuing supplies of gas at competitive prices, etc. "In addition," he stated, "it must be assumed that solutions will be found to various problems facing the industry, especially that of regulation."

The AGA has shown its interest in the regulatory problem by appointing a special committee of executives on

regulatory affairs (SCERA) a year ago. The group thus far has studied only national regulation, especially FPC policies and procedures. The report has now been completed and its recommendations are being translated into action by the industry. These fall into two categories: (1) those relating to administrative FPC procedures, and (2) those requiring new legislation, including proposed changes in the FPC and its staff. However, details of these proposals were not revealed. Similarly, nothing specific was reported at this time regarding discussions with other petroleum industry associations, designed to improve understanding about problems arising mainly out of the regulation of gas producers.

PRESIDENT Potter stated that the AGA is engaged in a comprehensive job of forward planning for the gas industry,

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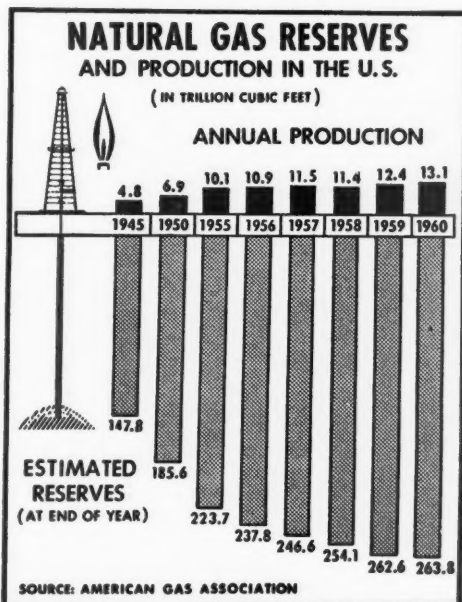
dealing with marketing, research, public relations, intra-industry relations, regulation, etc. Short-range goals and action plans determined by the Gas Industry Development Committee are now in the hands of company executives for study and adoption. They cover goals and plans over the coming five years but will be followed by the announcement of longer-range plans, probably before the end of this year. Among the short-range projects or goals which are being considered, we summarize the following:

LEGISLATION—A "watchdog" unit or group should be set up to study proposed gas bills, and keep the industry promptly informed of any pending legislation; also to use all legal means to support legislation deemed beneficial to the public interest, and oppose adverse proposals. In answer to an inquiry, Mr. Potter stated that he did not anticipate passage of any legislation by Congress this year dealing with gas regulation—although various bills have been "thrown into the hopper." The industry should oppose any legislation limiting the sale of gas, and should favor the right of the consumer to use a fuel of his own preference. (This goal is apparently set up in connection with the proposed congressional investigation of fuels, and the efforts of the coal lobby to curtail industrial use of gas.)

Service to Customers—Each utility should make its service available in all new areas which offer satisfactory economic returns in future, and should cooperate with LPG dealers in assuring gas service to fringe areas. Each company should also give effective support to area development programs and the establishment of new industries. The gas utilities should provide service in areas threatened with municipal ownership, assuming that

these will eventually become self-supporting.

SALES OF APPLIANCES—The gas utilities should provide substantial advertising and other promotional support for dealers' sales of gas appliances, and should actively encourage manufacturers to improve and develop their products. Each utility should set up a program to offer builders, architects, engineers, and home owners "more and better co-operation than our competition," particularly with reference to package installations. Sales efforts with respect to gas air conditioning should be intensified, so as to reduce manufacturing costs and encourage research and development. There should be a "crash" research program to develop "fully competitive year-round air-conditioning equipment"; the AGA research



Natural gas reserves in the United States advanced to a new peak of 263.8 trillion cubic feet at the start of 1961. Since 1950, the nation's proved reserves of natural gas have gained more than 78 trillion cubic feet despite steadily increasing levels of production.

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staff should be re-enforced by company research executives.

Employees should be encouraged to participate in the sale of appliances. Commercial cooking customers should be surveyed to determine their degree of satisfaction with present equipment, in the light of competition. Sales of gaslights and incinerators should be promoted. Potential major usage of industrial gas should also be studied. Regarding industrial processing sales, each utility should make sure that gas is available on a firm basis, and industrial customers should be "sold" on the superiority of gas for processing.

By 1963 the industry hopes to increase annual appliance sales to the following figures: 400,000 Gold Star ranges, 225,000 gas refrigerators, 900,000 gas clothes driers, 3.6 million gas water heaters, 1.5 million central gas house-heating units, and 50,000 central gas air-conditioning units. By 1965 residential gas service should be increased from 74 per cent of U. S. homes to 79 per cent; and customers for commercial service should be increased from 2.9 million to 3,750,000.

Regarding *public relations*, each company should keep public agencies and the financial community advised about the company's policies and progress. The AGA public information program should be strengthened and enlarged. An impressive exhibit will be displayed at the World's Fair in 1964-65.

GAS SUPPLIES—Further efforts will be made by the AGA to study the industry's long-range supplies of gas. Methods of improving the load factor by peak shaving, larger storage facilities, and increasing and upgrading off-peak sales will be investigated. Further efforts should be made to raise the standards of employee selection, the education of employees, etc.

Industry projections were presented for the coming decade, which we have translated into the form of average annual compounded rates of growth, as shown in table below.

Debentures versus Preferred Stocks

PENNSYLVANIA ELECTRIC COMPANY, of the General Public Utilities System, recently sold \$12 million debentures as the first step in a broad program of increasing the amount of system debt and reducing the amount of preferred stock outstanding. As of December 31, 1960, system capitalization was as follows (excluding Manila Electric which GPU plans to sell):

	Millions	Per Cent
Long-term Debt	\$443	51.8%
Preferred Stock	84	9.9
Common Stock Equity ..	327	38.3
Total	\$854	100.0%

The advantage of issuing debentures or bonds as compared with preferred stock is that the 52 per cent federal income tax applies to earnings *after* interest, but



	Number of Customers	Sales (Therms)	Revenues
Residential Heating & Cooling	5.2%	6.6%	
Other Residential	D 2.6	5.1	
Total Residential			7.2%
Commercial	3.4	8.2	9.9
Industrial, Etc.	3.1	5.4	9.1
Total	3.0	5.9	8.2

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before dividends—thus if a utility could sell either bonds or preferred stock on a 5 per cent basis (ordinarily it would pay a little more on preferred stocks) it would save about half of the 5 per cent by selling bonds (250 basis points) as compared with no saving on the preferred dividend. Assuming that GPU's entire \$85 million preferred stock were eventually redeemed and debentures substituted, the company in theory might save about \$2 million a year or about nine cents a share on the common stock—an increase of nearly 6 per cent in share earnings.

As the GPU capital structure is somewhat typical of the average electric utility company, the same possibility would exist for many other utilities. Probably due to this factor there has been a steady decline in the percentage of preferred stock to total capitalization since 1948 (and possibly earlier). Figures for 1960 are not yet available but as of December 31, 1959, the proportion of preferred stock for all class A and B electric utilities was down to 10.9 per cent compared with 11.4 per cent in the previous year and 13.9 per cent in 1948. During this period the common stock ratio decreased only slightly—from 37 to 36.4 per cent—while the long-term debt

ratio increased from 49.1 to 52.7 per cent. Separate figures are not reported for debentures as compared with mortgage bonds.

It is understood that this approach was the result of a considerable amount of work done by the American Electric Power system with the SEC and which culminated in an agreement between them relative to capitalization ratios wherein the SEC gave recognition to the accumulated amounts resulting from reductions in federal income taxes through the use of accelerated amortization and liberalized depreciation, which accumulated amounts had been invested in additional facilities. Such agreement, which could only have been reached and subsequently implemented if the SEC were willing to permit subsidiaries of holding companies to issue substantial amounts of unsecured long-term debt, provided for a minimum common equity of 30 per cent and a maximum of 60 per cent first mortgage debt, and 65 per cent total long-term debt.

In this connection J. Arnold Pines, chief financial analyst of the SEC Division of Corporate Regulation, delivered an address May 5th on "Changing Concepts in Electric Utility Financing" before the thirty-ninth Annual Conference of Util-

CURRENT YIELD YARDSTICKS
(Standard & Poor's Indexes)

	June 14, 1961	1961 Range		1960 Range	
		High	Low	High	Low
Utility Bonds—Aaa	4.49%	4.50%	4.33%	4.72%	4.32%
—Aa	4.58	4.58	4.38	4.73	4.36
—A	4.64	4.67	4.56	4.86	4.49
—Bbb	4.81	4.81	4.48	5.16	4.56
Preferred Stocks*	4.65	4.78	4.61	4.88	4.57
Utility Common Stocks	3.28	3.62	3.19	4.11	3.61
Yield Spread: A1+ Bonds					
Exceeded Common Stocks	1.21	0.88	1.14	0.61	0.71

*Twelve industrial and two utility issues (high-grade).

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ity Commission Engineers at Lexington, Kentucky. In his talk Mr. Pines referred to an article on "Capital Structures of Electric Utilities under the Public Utility Holding Company Act," by Donald C. Cook and Herbert B. Cohn, in the 1959

Virginia Law Review, Volume 45, Number 6.

One of the American Electric Power's subsidiaries, Indiana & Michigan Electric Company, recently issued \$20 million of debentures as a result of the agreement



CALENDAR OF PROPOSED UTILITY SECURITY OFFERINGS

July 1 to December 30, 1961

<i>Date of Bidding Or Sale</i>	<i>Approx. Amount (Millions)</i>	<i>Bonds and Debentures</i>	<i>Method Of Offering</i>	<i>Moody Rating†</i>
—	\$32	Trunkline Gas	N	—
*	7	California-Oregon Power	C	A
*	10	Idaho Power	—	Aa
*	12	Portland General Electric	—	Baa
*	15	Texas Gas Transmission	—	—
*	13	Kansas Power & Light	—	Aaa
*	75	Consolidated Edison	C	Aa
*	10	Metropolitan Edison	C	Aa
*	25	Long Island Lighting	C	A
**	6	Central Louisiana Electric	—	Baa
**	35	Arizona Public Service	—	—
7/—	35	Northern Natural Gas	N	A
7/12	8	California Electric Power	C	A
7/12	30	Texas Eastern Transmission	N	Ba
7/25	30	Union Electric	C	Aa
8/—	12	General Telephone of Florida	N	A
8/—	5	General Telephone of Illinois	N	—
8/8	20	Northern States Power	C	Aa
8/15	40	Consumers Power	C	Aaa
9/—	3	Northwestern Public Service	C	Baa
9/—	72	Panhandle Eastern Pipe Line	N	A
9/27	15	Rochester Gas & Electric	C	Aa
9/28	5	Mississippi Power	C	A
10/—	20	New England Power	C	Aa
10/18	16	Georgia Power	C	A
11/—	25	Transcontinental Gas Pipe Line	N	Baa
11/—	5	General Telephone of Michigan	N	—
12/—	5	General Telephone of Indiana	N	—
12/—	20	General Telephone of California	C	A
12/5	15	Virginia Electric & Power	C	Aa
12/7	5	Gulf Power	C	A
<i>Preferred Stock</i>				
—	10	Trunkline Gas	N	—
*	7	Wisconsin Power & Light	—	—
*	12	Arizona Public Service	—	—
7/12	20	Texas Eastern Transmission Conv. Sub.	N	—
7/13	4	Brockton Edison	C	—
9/28	5	Mississippi Power	C	—
10/18	8	Georgia Power	C	—
<i>Common Stock—Offered to Stockholders</i>				
**	20	Public Service of Colorado	—	—
9/—	15	Northern Natural Gas	—	—
<i>Common Stock—Offered to Public</i>				
*	5	California-Oregon Power	N	—
*	5	Idaho Power	—	—
—	8	Columbus & Southern Ohio Electric	—	—

*Expected in third quarter. **Expected in fourth quarter. †Preliminary, or rating of similar issues. C—Competitive. N—Negotiated.

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	<i>Per Cent Earned on Book Value</i>	<i>Per Cent of Rev. Avail. For Common Stock</i>	<i>Dividend Pay-out</i>
Electric Utilities	10.7%	13.2%	67%
Gas Retailers	12.2	9.4	63
Pipelines	12.6	8.5	67
Gas Holding Companies	9.3	8.6	65
Water Companies	8.5	14.7	63



with the SEC, and it is understood that American Electric Power, through the issuance of debentures by its subsidiaries, will gradually decrease the preferred stock segment of its capitalization.

There has been some surmise that a few border-line utilities might find that the rating agencies would lower their ratings by one step if their debt ratios should climb appreciably. For this reason, it appears likely that the process will continue on a gradual basis as in the past. Most utilities wish to retain their Moody ratings, probably more as a matter of prestige than for the lower cost of financing new bond issues. As of June 9th, the average yields for bonds of different Moody ratings were as follows:

		<i>Increase In Yield</i>
Aaa	4.30%	
Aa	4.40	0.10%
A	4.57	0.17
Baa	4.78	0.21

Assuming that new issues were on the same yield basis as the averages, a one-step decline in the rating would thus mean a rise of only about 10-21 basis points in interest costs—which would be far more than offset by the savings obtainable in issuing debentures in place of preferred stock.

Some Interesting Utility Averages

MIDDLE WEST SERVICE COMPANY of Chicago prepares an annual 78-page bulletin (price \$10) which presents some 80 statistical items and ratios for 123

electric utilities (including 11 holding companies), 13 gas pipelines, 44 gas retailers, five gas holding companies, and 14 water service companies. Some of these data are summarized as follows:

Water service companies require the largest amount of gross plant per dollar of revenues (\$5.53), and gas retailers the smallest (\$2.56). Electric utilities need \$4.27, gas pipelines only \$2.97.

Gas holding companies have the highest equity ratio of any group—45 per cent—compared with 41 per cent for gas retailers, 37 per cent for electric utilities and water companies, and only 30 per cent for pipelines.

Regarding maintenance, the pipelines spend only 0.6 per cent of plant account per annum and the water companies 1 per cent. Gas retailers need 1.5 per cent and electric utilities 1.4 per cent of plant. Regarding depreciation, the relationships vary considerably: The water companies are again low with 1.3 per cent, but the pipelines surprisingly charge 3.4 per cent of plant compared with 2.6 per cent for gas retailers and 2.3 per cent for electric utilities.

REGARDING the per cent earned on book value, the per cent of revenues brought down to the balance for common stock, and the percentage of dividend pay-out, averages for the various groups compare as shown in table above.

Regarding coverage of fixed charges, the pipelines and water companies are lowest with 2.6 times "coverage." Electric utilities make the best showing with 3.7,

PUBLIC UTILITIES FORTNIGHTLY

	Market Value Of Common Stocks	Net Plant Value
Electric Utilities (Including Holding Cos.)	\$33.3	\$39.5
Gas Pipelines and Holding Companies	6.3	9.6
Gas Retailers	3.3	3.5
Water Service3	.5

while the gas retailers average 3.3.

The figures for price-earnings ratios and yields are of less significance since they were compiled as of December 31, 1960. However, the relative figures for total common stock market value are of interest even though outdated, and we show them as compared with net plant values, in billions of dollars. (See table above.)

It seems unfortunate that the compilation does not include telephone companies.

past six months, became effective June 21st with the filing of corporate documents certifying that all necessary authorizations by stockholders and regulatory commissions had been obtained.

Announcement that COPCO had formally become a part of Pacific Power & Light, the surviving company, was made jointly at Portland and Medford by Paul B. McKee, chairman of the PP&L board, and A. S. Cummins, COPCO president, who, with Glenn L. Jackson, vice president of COPCO, becomes a vice chairman of the board of the enlarged utility.

Addition of COPCO's 93,000 customers to the PP&L system will raise its total utility customer count to 411,000. Combined revenues of the companies in 1960 were \$88 million and their utility plant investments total \$577 million.

California-Pacific Power Merger

MERGER of the California Oregon Power Company into Pacific Power & Light Company, under review for the

FINANCIAL DATA ON ELECTRIC UTILITY STOCKS

Approx. Rev. (Mill.)			6/13/61 Price About	Divi- dend Rate	Approx. Yield	Recent Share Earnings	% Incr. in Share Earnings Recent	5-yr. Avg.	Price- Earnings Ratio	Div. Pay- out	Approx. Book Value
\$159	S	Allegheny Power System ..	46	\$1.70	3.7%	\$2.35Ap	1%	3%	19.7	72%	\$18
338	S	American Elec. Power	66	1.88c	2.5	2.43Ap	—	5	27.2	74	24
74	O	Arizona Pub. Service	35	.72	2.1	*1.07Ma	* 5	* 8	*32.7	67	19
14	O	Arkansas Mo. Power	25	1.08	4.3	1.60Ma	22	5	15.6	68	11
40	S	Atlantic City Elec.	46	1.20	2.6	*1.62Ap	*10	* 9	*28.4	75	12
175	S	Baltimore G. & E.	31	1.00	3.2	1.47Ma	4	8	21.1	68	13
9	O	Bangor Hydro-Elec.	20	.80	4.0	1.13My	3	6	17.7	71	30
7	O	Black Hills P. & L.	39	1.60	4.1	2.56Ap	D2	3	15.2	63	21
124	S	Boston Edison	73	3.00	4.1	4.11Ma	8	4	17.8	73	52
34	A	Calif. Elec. Power	23	.84	3.7	*1.12Ma	*D2	* 3	*20.5	75	12
25	O	Calif. Oreg. Power	51	1.60	3.1	*2.15F	*20	.	*24.2	74	27
11	O	Calif. Pac. Util.	23	.90	3.9	1.24Ap	D12	1	18.5	73	13
82	S	Carolina P. & L.	56	1.48	2.6	2.24Ap	D3	5	25.0	66	21
37	S	Central Hudson G. & E. ..	32	1.00	3.1	*1.47Ma	* 4	* 8	*21.8	68	14
27	O	Central Illinois E. & G. ...	51	1.44	2.8	2.47Ap	9	7	20.6	58	16
45	S	Cent. Ill. Light	44	1.52	3.5	1.85Ap	D28	4	23.8	82	19
63	S	Cent. Illinois P. S.	68	2.12	3.1	3.03Ap	6	5	22.4	70	21
22	O	Central Louisiana Elec. ...	33	1.00	3.0	1.35Ma	13	7	24.4	74	11
44	O	Cent. Maine Power	32	1.52	4.8	*2.04Ap	*11	*	*15.7	75	25
173	S	Cent. & South West	43	1.02	2.4	1.45Ma	6	7	29.7	70	9
13	O	Cent. Vermont P. S.	22	1.08	4.9	*1.31Ap	*D7	* 2	*16.8	82	14
153	S	Cincinnati G. & E.	45	1.50	3.3	2.23Ma	4	3	20.2	67	16

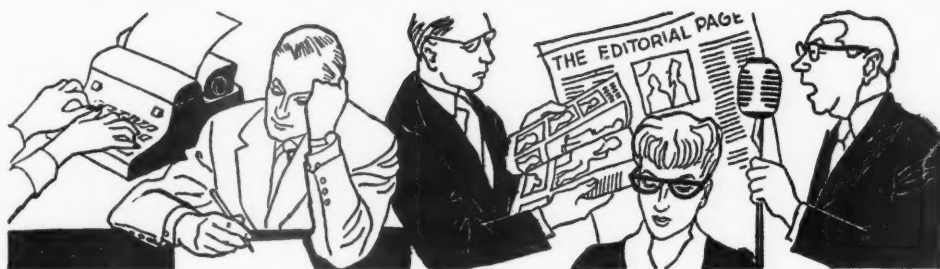
FINANCIAL NEWS AND COMMENT

Approx. Rev. (Mill.)	(Continued)	6/13/61 Price Above	Divi- dend Rate	Approx. Yield	Recent Share Earnings	% Incr. in Share Earnings Recent	Price- Earnings Ratio	Div. Pay- out	Approx. Book Value	
10	O Citizens Util. "B"	25	.60	2.4	.83Ma	19	8	30.0	70	6
136	S Cleve. Elec. Illum.	60	1.80	3.0	2.89Ma	D5	4	20.7	62	25
8	O Colo. Cent. Power	44	.96	2.2	1.35Ma	20	10	32.6	71	12
57	S Columbus & S. O. E.	60	2.00	3.3	2.98Ap	8	6	20.1	67	25
469	S Commonwealth Edison ...	85	2.00h	4.8h	3.93Ap	5	8	21.6	51	35
17	A Community P. S.	40	1.00	2.5	1.54Ma	2	5	26.0	65	13
89	O Conn. Lt. & Power	30	1.20	4.0	*1.47Ap	—	* 7	*20.4	81	15
656	S Consol. Edison	82	3.00	3.7	*3.78Ma	*D1	* 5	*21.7	79	50
281	S Consumers Power	71	2.60	3.7	3.37Ap	D13	2	21.1	77	36
96	S Dayton P. & L.	25	.80	3.2	1.16Ma	10	—	21.6	69	31
55	S Delaware P. & L.	52	1.20	2.3	1.68Ma	4	7	30.9	71	14
279	S Detroit Edison	60	2.20	3.7	2.68Ap	9	2	22.4	82	28
167	A Duke Power	56	1.60	2.9	2.19Ma	—	7	25.6	73	22
105	S Duquesne Light	28	1.18	4.2	*1.51Ma	* 3	* 5	*18.5	78	10
38	O East. Util. Assoc.	43	2.20	5.1	2.57Ma	D11	4	16.7	87	26
3	O Edison Sault Elec.	18	.90	5.0	1.12Ma	D11	—	16.1	80	10
19	O El Paso Electric	29	.62	2.1	.85Ap	—	8	34.1	73	12
13	S Empire Dist. Elec.	43	1.52	3.5	2.02Ma	7	7	21.3	75	17
68	S Florida Power Corp.	47	.88	1.9	1.36Ma	15	11	34.5	65	11
173	S Florida P. & L.	74	1.00	1.4	2.09Ma	4	15	35.4	48	17
4	O Florida Pub. Util.	26	.72d	2.8	1.32Ma	D1	7	19.7	55	11
205	S General Pub. Util.	30	1.16	3.9	*1.63Ma	—	* 3	*18.4	71	15
7	O Green Mt. Power	18	.80	4.4	.94Ma	9	4	19.1	85	13
86	S Gulf States Util.	38	1.00	2.6	1.26Ap	D11	5	30.1	79	13
54	A Hartford Electric	69	3.00	4.3	*3.75Ma	* 2	NC	*18.4	80	43
31	O Hawaiian Electric	86	2.50	2.9	3.46Ma	2	5	24.8	72	37
116	S Houston L. & P.	106	1.60	1.5	3.28Ap	6	5	32.3	49	24
37	S Idaho Power	35	1.00	2.9	1.38Ma	13	6	25.4	72	29
110	S Illinois Power	71	2.20	3.1	2.96Ap	4	11	24.0	74	20
56	S Indianapolis P. & L.	66	1.90	2.9	2.70Ma	7	7	24.4	70	19
34	S Interstate Power	25	.95	3.8	1.20Ma	3	4	20.8	79	9
53	S Iowa Elec. L. & P.	51	1.80	3.5	2.65Ap	2	5	19.2	68	21
51	S Iowa-Illinois G. & E.	49	1.90	3.8	2.57Ap	D8	2	19.0	74	20
51	S Iowa P. & L.	42	1.60	3.8	2.13Ma	D8	4	19.7	75	20
42	O Iowa Public Service	24	.88	3.8	1.33Ap	5	5	18.0	66	11
17	O Iowa Southern Util.	34	1.48	4.4	2.05Ap	D7	4	16.6	72	21
68	S Kansas City P. & L.	71	2.32	3.3	3.35Ap	4	6	21.2	69	31
37	S Kansas G. & E.	57	1.68	2.8	2.82Ap	3	8	20.2	60	23
57	S Kansas P. & L.	46	1.48	3.2	2.43Ma	2	7	19.0	61	19
49	O Kentucky Util.	42	1.60	3.8	2.72Ma	—	6	15.4	59	22
8	O Lake Superior D. P.	28	1.28	4.6	1.83Ma	7	4	15.3	70	18
145	S Long Island Ltg.	56	1.50	2.7	*2.21Ma	* 6	* 8	*26.4	68	20
71	S Louisville G. & E.	62	1.52	2.4	2.66Ma	2	8	23.3	57	22
13	O Madison G. & E.	34	1.00	2.9	2.09Ma	11	3	16.3	48	21
5	A Maine Pub. Service (o) ..	21	.95	4.5	1.12Ap	D3	4	18.8	85	14
8	O Michigan G. & E.	88	2.00e	5.6e	5.54Ma	5	8	15.9	36	29
215	S Middle South Util.	38	1.06	2.8	1.54Ap	14	9	24.7	69	14
35	S Minn. P. & L.	42	1.60	3.8	2.51Ap	13	4	16.7	64	21
16	S Missouri P. S.	23	.72f	5.1f	1.06Ap	D10	5	21.7	68	8
9	O Missouri Util. (1)	25	.96	3.8	1.42Ma	26	2	17.6	68	19
49	S Montana Power	37	1.12	3.0	*1.50Ma	*13	* 8	*24.7	75	10
9	O Nevada Power	42	.84m	2.0	1.52Ap	10	5	27.6	55	15
180	S New England Elec.	26	1.08	4.2	1.33Ma	D1	2	19.5	81	15
55	O New England G. & E.	32	1.24	3.9	1.85Ma	8	8	17.3	67	18
110	S N. Y. State E. & G.	36	1.30	3.6	*1.98Ap	*10	* 8	*18.2	66	19
299	S Niagara Mohawk Power ...	43	1.80	4.2	*2.29Ma	* 6	—	*18.8	79	23
124	O Northern Indiana P. S. ...	40	1.20	3.0	1.76Ma	9	4	22.7	68	28
183	S Northern States Power ...	33	1.18	3.6	1.50Ma	5	5	22.0	79	12
13	O Northwestern P. S.	26	1.20	4.6	1.67Ma	—	5	15.6	66	13
160	S Ohio Edison	38	1.48	3.9	2.12Ap	3	4	17.9	70	17
62	S Oklahoma G. & E.	41	1.20	3.0	1.51Ap	7	5	27.2	79	11
31	S Orange & Rockland Util. ..	53	1.20	2.3	*1.72Ma	* 4	*11	*30.8	70	14
20	O Otter Tail Power	39	1.80	4.6	2.35Ma	D3	1	16.6	75	25
648	S Pacific G. & E.	77	2.80	3.6	*4.30Ma	*13	* 5	*17.9	65	42
63	O Pacific P. & L.	46	1.80	3.9	*2.35F	*23	* 6	*19.6	77	20

PUBLIC UTILITIES FORTNIGHTLY

Approx. Rev. (Mill.)	(Continued)	6/13/61 Price About	Divi- dend Rate	Approx. Yield	Recent Share Earnings	% Incr. in Share Earnings Recent	5-yr. Avg.	Price- Earnings Ratio	Div. Pay- out	Approx. Book Value
142 S	Penn P. & L.	31	1.25	4.0	1.71Ap	D3	3	18.1	73	13
273 S	Phila. Electric	31	1.20	3.9	*1.46Ma	—	* 4	*21.2	82	28
45 O	Portland Gen. Elec.	44	1.52	3.5	2.15Ap	14	5	20.5	71	19
89 S	Potomac Elec. Power	42	1.44	3.4	*2.00Ma	* 6	* 6	*21.0	72	20
113 S	Pub. Serv. of Colo.	84	2.10m	2.5	*3.24Ma	*19	* 5	*25.9	65	26
394 S	Pub. Serv. E. & G.	53	2.00	3.8	*3.01Ma	*22	* 3	*17.6	67	28
92 S	Pub. Serv. of Ind.	60	2.20	3.7	2.56Ap	D6	2	23.4	86	28
35 O	Pub. Serv. of N. H.	23	1.04	4.5	1.41My	3	2	16.3	74	14
20 O	Pub. Serv. of N. M.	50	1.00	2.0	1.59Ma	6	11	31.4	64	13
37 S	Puget Sound P. & L.	41	1.56	3.8	*1.94Ma	*D8	* 8	*21.1	80	23
76 S	Rochester G. & E.	48	1.80b	6.7b	*3.00Ma	*D5	* 8	*16.0	60	32
11 S	St. Joseph L. & P.	38	1.60	4.2	2.18Ma	D5	8	17.4	73	19
81 S	San Diego G. & E.	32	1.20	3.8	1.67Ap	D9	9	19.2	72	19
12 O	Savannah E. & P.	32	1.12	3.5	1.40Ap	14	4	22.9	80	14
14 O	Sierra Pacific Pr.	30	.88	2.9	1.14Ap	D8	12	26.3	77	9
306 S	So. Calif. Edison	70	2.60k	3.7	*4.45Ma	* 1	* 7	*15.5	58	44
56 S	So. Carolina E. & G.	54	1.50	2.8	2.05Ma	8	6	26.3	73	19
297 S	Southern Co.	55	1.50	2.7	1.98Ap	—	8	27.8	76	17
22 S	So. Indiana G. & E.	42	1.70	4.0	2.61Ap	1	3	16.1	65	23
4 O	Southwestern E. S.	21	.76	3.6	1.03Ap	3	5	20.4	74	8
53 S	Southwestern P. S.	30	.88	2.9	1.11Ap	1	6	27.0	79	7
41 A	Tampa Electric	46	.72	1.6	1.22Ap	15	12	37.7	59	11
202 S	Texas Util.	97	2.08	2.1	3.14Ap	6	9	30.9	66	22
49 S	Toledo Edison	24	.70	2.9	1.10Ma	1	—	21.8	64	10
20 O	Tucson G. E. L. & P.	42	.80	1.9	1.06Ma	D15	8	39.6	75	9
159 S	Union Electric	47	1.80	3.8	*2.13Ma	* 6	* 5	*22.1	84	18
40 O	United Illuminating	32	1.40	4.4	*1.76De	* 4	* 2	*18.2	79	16
8 O	Upper Peninsula Pr.	35	1.70	4.9	2.31Ma	20	—	15.1	74	20
53 S	Utah Power & Light	35	1.32	3.8	1.81Ap	D3	4	19.3	73	20
161 S	Virginia E. & P.	57	1.30	2.3	*1.92Ap	* 8	* 8	*29.7	68	16
40 S	Wash. Water Pr.	52	2.00	3.8	*2.51Ap	4	* 3	*20.7	80	29
87 O	West Penn Power	71	3.20	4.5	3.65Ma	4	2	19.5	88	26
14 O	Western Lt. & Tel.	32	1.20	3.8	1.78Ap	8	6	18.0	67	29
34 O	Western Mass. Cos.	26	1.20	4.6	1.61De	D3	1	16.1	75	19
141 S	Wisc. El. Pr. (Cons.)	48	1.80	3.8	2.74Ma	D4	7	17.5	66	29
48 O	Wisconsin P. & L.	38	1.48	3.9	2.35Ma	—	7	16.2	63	21
48 S	Wisconsin P. S.	33	1.30	3.9	2.05Ma	4	4	16.1	63	18
Averages				3.5%		4%	6%	22.1	70%	
Foreign Companies										
\$127 S	American & Foreign Pr. ..	11	\$.50	4.6%	\$1.30De	21%	0%	8.5	38%	\$33
161 A	Brazilian Traction	5	—	—	.98De	70	—	5.1	—	29
103 A	British Col. Power	36	1.60	4.4	2.37De	D5	3	15.2	67	32
26 O	Calgary Power	29	.40	1.4	1.09De	14	13	26.6	37	6
19 A	Gatineau Power	38	1.60	4.2	2.25De	13	2	16.9	71	22
17 A	Quebec Power	35	1.60	4.6	2.53De	8	9	13.8	63	27
83 A	Shawinigan Water & Power	28	.80	2.9	1.54De	6	6	18.2	52	19

*Deferred taxes resulting from liberalized depreciation are not normalized. If they had been normalized the price-earnings ratio would be higher, and the rate of increase in share earnings would be smaller. D—Decrease. NC—Not comparable. A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. b—Also 3 per cent stock dividend (paid January 25, 1961) included in the yield; similar dividends are paid annually, representing balance of earnings. c—Also 2½ per cent stock dividend January 10, 1961. d—Also 2 per cent stock dividend May 1, 1961. e—Also regular annual 3.3 per cent stock dividend (3 per cent in previous years), included in the yield. f—Also regular stock dividend of one-half per cent quarterly, included in yield (paid since 1956). h—Also 2.4 per cent stock dividend December 1, 1960, included in yield; stock dividends are paid annually, reflecting balance of earnings. j—The rate of increase would be 12 per cent if the present number of shares had been used to compute share earnings of past years, instead of using the number of shares actually outstanding at the end of each year. k—Also 4 per cent stock dividend February 24, 1961. l—Adjusted for 50 per cent stock dividend June 5, 1961. m—Fifty per cent stock dividend payable January 18, 1961—cash dividend on new stock 84 cents. n—Also 5 per cent stock dividend February 17, 1961. o—Adjusted for 13 for 10 stock split record June 27, 1961.



What Others Think

The EEI's Twenty-ninth Annual Convention

ON June 5th, 6th, and 7th, the Edison Electric Institute held its twenty-ninth annual convention in New York city. The theme of the convention this year was "Targets for Tomorrow in Electric Power."

A large number of industry spokesmen presented their views and a good many of them expressed growing concern over the resurgence of government ownership agitation in the federal government. The following digests of speeches represent only a sampling of the addresses which were delivered to the convention.

Sherman R. Knapp, retiring president of the EEI, stated that the investor-owned electric utility companies must arm for a future of intense competition with other energy sources and with government power projects if they are to reach their growth targets. Mr. Knapp, who is also president of The Connecticut Light and Power Company, stated that the public is pretty well satisfied with the way the investor-owned public utility industry functions within the framework of existing state and federal regulation. There is ample evidence that the combination of regulation and competition has done an eminently satisfactory job in protecting the public. Competition always has and always will play a vitally important rôle in keep-

ing electric rates in line, he pointed out, and "much of our business is highly competitive." In order to continue to grow, "rates for electricity must be competitive with other fuels and other means of doing the jobs our customers want to have done."

REFERRING to the growth of federal government power operations, Mr. Knapp cited the plans of the Interior Department which, he said, would constitute the highway to complete nationalization of the electrical industry. In spite of the handicap of having to compete with subsidized government power, the investor-owned utility industry has had a remarkable record of growth, he said. Through good times and bad, new uses for electricity in the home, in our commercial establishments, and in industry have resulted in new sales records year after year. The electrical industry is now one of America's largest industries, with assets of over \$50 billion and an annual rate of expenditure for new equipment and facilities for supplying service amounting to about \$3.5 billion, he stated. This represents about 10 per cent of all business capital expenditures.

While power pooling and interconnections are not new ideas, Mr. Knapp noted, they provide a means of taking advantage

PUBLIC UTILITIES FORTNIGHTLY

of the technological advances which have been made in electric power generation and transmission during recent years. Mr. Knapp stated that he was convinced that power pooling is the soundest answer to our growth problems and that we must continue to enlarge our pooling areas in the years ahead in order to take advantage of the potential economies.

With the expansion of the power-pooling concept, there are going to be many new problems to be faced in the financing of various sizes and shapes of joint undertakings, Mr. Knapp said. He forecast that there would be problems which will involve the state legislatures, regulatory bodies, and investment bankers, in new and unique situations which can only be resolved by the exercise of patience, intelligence, and ingenuity. He concluded by observing that this phase of future operations poses perhaps a greater challenge than the technical and engineering problems.

TOMORROW's managers can be as good as today's managers care to make them, Ralph M. Besse, president, The Cleveland Electric Illuminating Company, told the convention. During the next ten years, it has been estimated that two out of every three of our present executives on the job must be replaced due to retirement or mortality, Mr. Besse said. In addition, industrial expansion will add new requirements for managers at the rate of one for every three managers today.

Mr. Besse predicted that the electric company of the future will be bigger, will have more difficult technical requirements, more intense competition, and a more complex overall operation, and the job of tomorrow's managers will be vastly more difficult.

Every electric utility company should establish a carefully developed plan of action to meet tomorrow's management

needs, he said. The Cleveland utility executive outlined a plan which, he said, would be required, as a minimum, to produce effective long-range managerial improvement. He stated that a company should analyze what its future management needs will be, and consider the organizational changes and developments expected in the years ahead.

Qualifications of future managers should be thought out and written down. They should not be left to the hazard of varied and conflicting standards within the organization depending on the whims of individual executives.

NOTING that line-of-promotion seniority is a deadening practice, Mr. Besse said that effective management development required an established system of internal selection designed to move the best people in the organization to the top and eliminate inadequates.

Plain job assignments are the most important development medium, Mr. Besse said, and high-potential people should be permitted participation in the multiple areas where an executive must have some competence and basis for judgment. He also feels that important supplemental activities are educational courses, in-plant academic courses, community participation, and industry association activities.

Mr. Besse stressed that effective management development programs in the electric utility industry would have to include incentives competitive with those offered by other industries. The incentives would include all the basics of good salary administration and a well-rounded compensation program, with consideration given to such things as pensions, group life insurance, deferred compensation, bonuses, and stock options.

Whether tomorrow's managers become champions or deteriorate to bush

WHAT OTHERS THINK



"NO GAS LEAKS. BUT TALK ABOUT FISH WORMS!"

leaguers depends entirely on the vigor of the programs and systems designed to aid them, and Mr. Besse called on top executives to assume personal direction of specific programs to achieve the best in management.

A FORECAST of increasing governmental activity in industrial areas was made by Dr. Emerson P. Schmidt, director of economic research for the Chamber of Commerce of the United States. Dr. Schmidt told the convention that the central government has lost all sense of the

distinction between nation-wide problems (fire control, juvenile delinquency, etc.) and truly national problems which can only be handled by the central government.

In international relations, he charged, our record and plight have reached a new and frightfully dangerous low. Today, according to Dr. Schmidt, many people are confused, because our nation lacks basic goals and principles, such as those stated in the Bill of Rights and the Declaration of Independence. These "bench marks" are necessary to test trends and

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current policy recommendations, he asserted.

Where human freedom has failed, he declared, government has become the tyrant. We should understand the proper structure, nature, and function of government, Dr. Schmidt emphasized, and he believes that we need *strong but limited* government.

Today the national government is the biggest in endless lines, Dr. Schmidt declared, and it is our fastest-growing industry. The government has become such an important customer that many companies today find their officers subdued into "speech paralysis" on key issues affecting the future of our country. In education, he said, once the national government becomes the important source of teachers' salaries, teachers will have to be cautious both in discussing educational questions and other issues. Government competes unfairly with the citizen trying to make a living, Dr. Schmidt charged, and sometimes, as with federal power projects, the real economic costs to the government are falsified by the accounts and statistics.

LOOSE fiscal and monetary power is eroding the value of the dollar. What is the moral difference, the chamber of commerce executive asked, between a bank robber who takes half your money and public policies which leave you with only half of your purchasing power?

In economics, the nation should aim at five targets, Dr. Schmidt said. The five goals recently developed by the Committee on Economic Policy of the chamber are: (1) economic freedom; (2) overall economic efficiency; (3) economic growth; (4) economic stability; and (5) economic security. Government should support these goals by adhering to its major functions, which are the protection

of individual freedom, the preservation of law and order, the protection of property, and the fostering of competition and economic stability, Dr. Schmidt said.

PHILIP SPORN, president of the American Electric Power Company, stated that in the next forty years there is a prospect of the total 1960 generation multiplying eightfold to six trillion kilowatt-hours in the year 2000. However, this kind of future cannot and will not come into being by itself, the utility executive warned. He stated that there is much, perhaps far too much, that needs to be done, and even more which, if left undone, will prevent the realization of these bright prospects.

According to Mr. Sporn, some of the younger electric utility executives are overlooking the great influence of the long-term declining trend in the price of electricity. Complacency regarding price is a deadly attitude for the electric utility industry, he cautioned. It may be that the whole concept of generation—how and where to generate—has gotten into a rut, Mr. Sporn asserted. It may be that the concept of transmission is wasteful and inefficient; it could be that the concept of markets that are available is a limited concept and perhaps all of these fundamentals can be approached in a new way to bring about reductions in cost to avoid increases in price, he stated.

Mr. Sporn challenged the electric utility industry to proceed on the basis that price and price reduction (to the very lowest level consistent with the interests of the general public, the customers, the employees, and investors) offer a solid basis for growth and development.

MR. SPORN urged that light and power companies should face the ques-

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tion of public power with courage, resourcefulness, and with a great sense of responsibility and soberness. The growth of public power, Mr. Sporn asserted, has been accounted for by a lack of alertness to both opportunity and responsibility on the part of investor-owned utilities. The industry must develop the ability to defend itself, he said, and to sell the idea of private enterprise in power.

He charged that we have not done enough to make a utility career an exciting adventure for our very bright and able people. Electric companies, he stated, should develop people able and willing to stand up and defend the industry for the great job it is doing for the people of the country as a whole. He urged that electric companies should adopt policies based on the great rôle that electric energy and the electric industry have to play in the future growth of this country.

DR. J. A. HUTCHESON, vice president in charge of engineering for the Westinghouse Electric Corporation, said that during the next twenty years the nation's investor-owned electric utility companies will be spending a total of \$40 billion to improve and expand their distribution systems. Historically, utility companies and electrical manufacturers have given more thought to, and put more resources behind, improvements in generation and transmission than to distribution because there was more to gain

through research and development in those areas, Dr. Hutcheson said.

Within ten years, the United States will be erecting new buildings equivalent in value to all that are standing today, he predicted. Present methods of expanding distribution are too expensive to create and maintain and will eventually prove to be woefully inadequate to the needs of the times, Dr. Hutcheson said. Looking ahead to distribution systems of the future, Dr. Hutcheson foresaw a day when meters would be read automatically by computers, which would then figure the bill and send it out. The computer would also record the history of energy use and predict future changes in system design needed to meet demands. A master computer will one day provide plans for improving the entire system and, each morning, would provide an output sheet reporting company revenues, predicting future revenues, and estimating the cost of any changes necessary to meet future demands, he stated.

SUCH a system is not a matter of fantasy, Dr. Hutcheson stated. There is nothing in this distribution system of tomorrow that could not, with a very little effort, be built today. If there is an error in prediction, Dr. Hutcheson noted, it is apt to lie in the conservatism of the growth forecast for the electric utility industry.

—C.M.B.

Continued Hearings on Gas Act Amendments

THIS month saw the continuation of testimony before the U. S. Senate Commerce Committee on proposed amendments to four sections of the Natural Gas Act. The last of witnesses in support of S 666, introduced by Senator Warren G. Magnuson (Democrat, Washington) and supported by the National

Association of Railroad and Utilities Commissioners, appeared before the committee.

Also testifying was Jerome K. Kuykendall, Federal Power Commission chairman, who explained why the FPC was divided in its support of the bill, backing some measures and opposing

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others. The committee also started to hear witnesses in opposition to the proposed legislation. All were officials or representatives of natural gas producers or pipeline companies. Appearing or scheduled to appear were L. Dan Jones, counsel for the Independent Petroleum Association of America; Clayton L. Orn, representing the American Petroleum Institute, Mid-Continent Oil and Gas Association, Western Oil and Gas Association, and others; W. M. Elmer, president of the Texas Gas Transmission Company; Edward Parks, president of the United Gas Corporation and representing the American Gas Association; J. F. West, president of the Texas Independent Producers and Royalty Owners Association; John W. Partridge, president of the United Fuel Gas Company and representing the Columbia Gas System, Inc.; N. Knowles Davis, vice president of the Tennessee Gas Transmission Company; Jerome J. McGrath of the National Coal Association; and Samuel Joseph of H. Zinder & Associates, Inc., representing the Phillips Petroleum Company.

The final two witnesses in favor of the amendments were David M. Brackman, member of the Massachusetts Department of Public Utilities; and Leonard Bessman, chairman of the Wisconsin Public Service Commission.

In Favor of the Bill

BRACKMAN, in his testimony, said that the NARUC believed that certain problems now confronting the FPC are "either unadministrable in nature or could be greatly simplified and improved by the amendments to the Natural Gas Act." He also said that the responsibility for the upward spiral of natural gas prices is due to the open ended escalation clauses commonly included in producer contracts. He pointed to the FPC's General Order No.

232 of this year which outlawed all types of indefinite pricing clauses in future contracts.

The Massachusetts commissioner also favored the proposals which would result in faster decisions by the FPC on rate increase cases. He said it would eliminate the "anomalous practice of pipelines living on borrowed funds, which have been collected from the distributing companies and their customers in the form of increased rates put into effect under bond." It would also avoid the occasional situation where the cumulative amount of refunds due under successive rate filings is so substantial as to restrain action by the FPC, in view of the heavy financial impact on the pipeline company.

Brackman pointed out that New England pays the highest price in the country for natural gas because of its remoteness from the sources of the gas. He said the area would rather continue to use natural gas but might have to return to manufactured gas because of the increasing high cost. Senator Monroney, attacked all nonproducing states such as the New England states, kept stressing the "spread" between producer prices and prices at the burner tip. He contended a huge profit was going to the local distributors within a community. Senator Yarbrough concurred in this view. Brackman felt the profits were being reaped by the pipeline companies, not the local distributors.

BESSMAN echoed Brackman in attributing the rise in natural gas prices at the producer level to the indefinite escalation clauses. He said that according to the Bureau of Mines' statistics, the average cost of natural gas per Mcf in 1940 of 4.5 cents rose to 12.9 cents per Mcf in 1959. He stated that the amendment to § 4(e) would remove the principal obsta-

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cle to the ability of state regulatory agencies to effectively perform their statutory duty of regulating the retail rates of natural gas distributing companies. Such regulation has been impeded because of the inability of state regulatory agencies to actually know the level of city gate rates which are applicable. As others had said, Bessman testified that the time interval and the amount of money involved in pyramiding undecided rate cases greatly complicated the refunding process to ultimate consumers.

KUYKENDALL submitted a statement containing the FPC's views on the new bill. He said the commission endorsed three of the bill's proposals and opposed the other two. The FPC lent its backing to the proposal to make it more difficult to put new rate increases into effect when there is a previous increase awaiting commission action. Kuykendall complained the present law gives natural gas producers and pipeline companies "virtually unlimited right" to pile one rate increase on top of another with approval or disapproval of the commission. He also said his agency supports a section of the bill which would outlaw the various types of indefinite pricing clauses. The other section of the bill supported by the commission would allow the commission to suspend rate changes involving natural gas for resale for industrial use. The other two sections of the bill are opposed by the FPC, said Kuykendall.

Concerning the last proposed amendment, designed to speed up rate increase cases before the FPC, Kuykendall said he applauded the purpose but disagreed with the means proposed by the amendment, first, because either the amendments do not offer practical solution to the problem of delay, or, second, because amendments of this type would more properly

be made to a "general statute like the Administrative Procedure Act than to specific organic acts such as the Natural Gas Act." Kuykendall also said the FPC was opposed to the imposition of time limits on rendering decisions on cases. He admitted there were many delays inherent in the administrative process, but he said in the interests of obtaining all the facts, time limits are a detriment.

Opposition Witnesses

THE first witnesses in opposition to the amendments, mostly pipeline and producer representatives, voiced their opinions.

Elmer said § 3 of the bill (which would prohibit consecutive rate increases resulting from the automatic operation of § 4(e) of the act which allows rate increases to go into effect if the FPC has not made a final decision within five months) presents a most serious threat to producers and pipeline companies. He said that the bulk of rate increase applications by pipelines arises from costs of gas, increases in the cost of building new pipeline facilities, and labor and operating costs. Eighty per cent of 79 rate increase applications filed since 1953 by 21 major pipeline companies resulted from these three factors, he explained. Given the need to recoup these costs, and given FPC regulations under which the pipeline may only apply to increase its rates to reflect *known* costs, it is impossible to keep from filing multiple-rate increase applications. This is why the frequency of rate filings has been so high, he said. A big portion of the backlog of rate cases before the FPC, he stated, can be cured by changes in commission procedure. Still, the most important factor leading to S 666 is that the FPC cannot regulate the selling price of producer's gas on the utility-type form of regulation similar to that

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used for the pipeline industry. Negotiated settlements have reduced the rate case backlog but are not a complete answer because in these proceedings pipeline rates are cut to rock bottom, and the pipeline must immediately come back for a rate increase to reflect a then known increase in costs.

THUS, said Elmer, passage of § 3 would place the financial health of the pipeline industry "in the hands of the FPC and interveners who delay rate proceedings." In effect it would give the FPC complete discretionary power over the constitutionally guaranteed opportunity for natural gas companies to recoup costs and earn a fair return on investment. It will, therefore, result in extensive litigation which will delay the expansion of facilities, Elmer added. In regard to § 4 of the bill, the language of the proposal is more vague in establishing the "public interest" standard than the Catco decision and subsequent court decisions, and it, therefore, is unnecessary since it would only further confuse the situation.

Parks testified that successive rate cases from one company are the result of regulatory delay, not the cause. To solve the problem by inhibiting the filing for rate relief is to attack the results, not the cause, since these successive applications came about as a result of regulatory delay.

Find the causes of this delay, Parks testified, correct them, and the problem will disappear. He believed that S 666 was directed more to the results of delay than to the causes. Parks added that §§ 1, 2, and 3 were apparently drafted by the NARUC on the theory that by inhibiting rate increases, the delays in handling such proceedings will be eliminated. He stated that this approach fails to attack the roots of the problem.

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IT does not appear, he continued, that severe restrictions on the filing of applications for rate relief are directed to the basic conditions. The slow pace at which FPC regulation has proceeded and not the need to file for rate relief has been primarily responsible for dissatisfaction by regulators, the public, and the regulated companies alike. A way must be found at the working levels of regulation to reduce delay, Parks suggested. If the elimination of delays is attained, then the need for legislation such as S 666 disappears. Assuming that the attainable reduction in delays does not materialize rapidly, the bill still would not cure the ailment of delay, he concluded, and it would damage the public interest "by obstructing the performance of adequate and dependable gas service at reasonable and compensatory rates."

Would Hurt Producers, Consumers

ORN said he had come to oppose S 666, and S 1946 which also contains proposed amendments to the act, and that his remarks were applicable to both bills. He said that both bills would make administration of the act more difficult, would increase, not decrease, the legislation and work before the FPC, reduce the supply of natural gas to consumers, and work hardships on the producers. He pointed out that three of the indefinite pricing clauses—the two-party and three-party favored-nation clauses, and the spiral escalation clause—have already been outlawed by the FPC and that the authority to do this should rest with the FPC, not in a statute.

The abolition of these indefinite pricing clauses discriminates against the producers of natural gas who sell in interstate commerce, Orn stated, and puts the interstate pipelines at a disadvantage with local gas producers. The FPC, how-

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ever, is in a position to be flexible in these matters, while legislation is not.

Section 3 of the bill would prohibit consecutive rate increases resulting from the automatic operation of § 4(e) of the act which allows a rate increase to go into effect if the FPC has not made a final decision on the case within five months. Orn believed that the amendment would, under present FPC operations, deny producers the right to file for necessary price increases for many years. At present there is the protection that the increases are subject to refund at 7 per cent. He said that this interest rate was too high, and if the rate increase was refused it worked a hardship on the company. Even if the increase was allowed, the concern loses funds for the six-month period before the new rate goes into effect. S 666 would even extend the period to more than six months, working a greater hardship, he added.

This part of the bill would also increase the work load of the FPC since hearings would be necessary under the proviso to determine if the increase was necessary, and later another hearing to determine if the increase was reasonable.

Gas Supply to Increase

IN general, he commented, it would affect the future supply of gas, shortages would result, and consumers would be hit with a higher price of gas. In 1946, he pointed out, 3.6 Mcf of new supplies was found to each 1 Mcf produced. In 1960 the ratio was 1 Mcf to 1 Mcf and an annual increase of gas consumption of 4.7 per cent annually until 1970 was forecast.

Orn had no other comment upon § 4 of the amendment except that it was not needed. This is the section which would require the FPC, in passing upon an application for a certificate of public

convenience and necessity, to make a determination that the initial price was consistent with the public interest.

Section 5 would prescribe procedural requirements in the hearing and disposition of cases before the FPC which would result in obtaining quicker decisions on pending rate increase cases. Orn said that he did not think the new amendment would speed up the FPC work, and felt the commission should take it upon itself to solve its own procedural problems.

PARTRIDGE testified that the natural gas industry would be "stifled" and consumer interest damaged if the restrictions were placed in conditional rate increases. He stated that if the bill were enacted pipeline companies would be "forced" not to expand facilities, not to seek new gas supplies, and not to meet consumer demands. In opposition to a statement by NARUC officials that producers and pipelines deliberately pile on rate increase cases before the FPC so that hearings will take years to be decided, Partridge declared that the situation was just the opposite—gas companies sought "prompt" settlement of rate cases.

He contended that the uncertainty of earnings because of rate delays made company financing economically difficult. He said that Senator Albert Gore (Democrat, Tennessee) was "misinformed" when he recently stated there was "no real inducement" for gas companies to settle rate cases.

JONES said that S 666, which its proponents say will correct the "regulatory lag" which has engulfed the FPC, does not take into account that the producer of natural gas is one of the parties involved. He stated that the bill would not solve the "regulatory lag" problem, and would penalize the producer. The far-

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reaching effects adversely affecting the producer would be ultimate hardships for natural gas consumers.

The bill fails to recognize that the "regulatory lag" is merely a symptom. The basic cause of the trouble, said Jones, grows out of the attempts of the federal government to regulate a local producing and gathering function. The problem has been materially aggravated by unlimited interventions by various parties, including state commissions that are advocating this bill, he continued. The FPC, in its Phillips case decision, said that its efforts of seven years to regulate this local function had been futile, and that it was impracticable and impossible to continue them.

Called "Patchwork" Bill

JONES tied the drop in the development of natural gas reserves to the "damaging results" of the federal government attempting to regulate the local function of producing gas. Prior to 1950, he said, there was a 30-year supply of known gas reserves. At present, there is a 20-year supply. Unless the basic cause of the "regulatory lag" problem is corrected, he believed, this downward trend would continue. "Patchwork approaches" such as S 666, he added, which serve the interest of some of the parties affected by penalizing others, would only serve to heap additional disruptions upon the efforts to develop gas reserves.

He said that there is "nothing basically unfair or wrong" with the indefinite pricing clauses dealt with in § 1 of the bill. On the contrary, these pricing provisions were a logical and prudent means of selling into a market that requires long-term contracts. The provisions of the bill would substantially strip producers of this freedom and right to protect themselves from normal business

hazards through the exercise of ordinary prudence.

In attacking § 3 of the bill, which is supposed to correct the "regulatory lag," Jones said that if the provision became law, it would impose an intolerable burden on the producer's operations by prohibiting any consideration of rate increases under however many contracts he may have in various pricing areas so long as the FPC has not reached a final decision on a single contract previously filed. He also believed that this provision would invite interveners to further harass and delay rate proceedings. So long as a final decision in a pending case was prevented, rate increases, irrespective of the merits therefor, could not be applied for.

Gas Needs in Kentucky

APPEARING before the committee, also in opposition to the bill, was J. David Francis, public service commission chairman, Frankfort, Kentucky. He confined his testimony to attacking § 3 of the proposed amendment, which he said would not accomplish its purpose. It would become harmful to the producers, pipelines, and consumers. If enacted, the section would also make it impossible for pipeline companies supplying Kentucky to undertake necessary expansion of their facilities. He stressed that the availability of natural gas is needed for the state's industrial growth, and that anything which would harm the ability of pipelines to expand would stunt Kentucky's industrial expansion.

Instead of enacting the provisions contained in § 3, Francis said that the FPC should expedite hearings, by either increasing the membership and staff of the commission, or allowing it to sit in panels to hear up to three cases at one time. Francis also added that § 3 would not

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cure the problem of pyramiding rate increase cases. He also suggested that small producers might be relieved from regulation since the problem before the FPC is in trying to regulate cases on a utility basis.

Senator Andrew F. Schoeppel (Republican, Kansas) noted that the FPC is currently up to date on cases before the commission, and that the trouble lies in its large backlog of cases created by Supreme Court decisions.

Congressman Testifies

APPEARING in favor of the bill, as well as S 1946 introduced by Senator John A. Carroll (Democrat, Colorado), was Representative Ken Hechler (Democrat, West Virginia). He pointed out that in West Virginia more natural gas is produced than is consumed. However, because of the need of transporting gas over long distances—particularly from the Southwest to the northeastern seaboard—and the “zone formula” used by the FPC in fixing rates, West Virginia has been a victim of the inflationary temporary-increase spiral, he said.

Representative Hechler said that the five-month period during which rate increases may be suspended is too short, unrealistic, and works a hardship on all involved in gas production and consumption except the transmission companies. He believed that this five-month provision was simply an invitation to the pipeline operators to seek “exorbitant” rate increases, and before the cases are decided or are dragged out through the courts, to ask for more increases and to collect the extra money from the consumers while these cases are pending.

If the FPC or the courts disallow the increase, he said, then the overcharged amounts collected must be returned to

the consumers plus 7 per cent interest. This interest rate is a very mild one for the pipeline companies to pay when it is considered that the normal return in equity capital is 10 or 11 per cent. Hechler said that even if the rate increase was disallowed, the pipeline operator was making a “clear profit” of 3 or 4 per cent on the transaction and getting a “neat return” through the “use of cumbersome delaying tactics of the rate increase procedure.”

The Representative also said the pipeline company would be in a better position if the rate was allowed. He said the pipeline operators “. . . can forcibly borrow these funds from the consumer” and invest them as they please in plant expansion. The “hapless consumer provides a constant source of capital like a captive bank. . . . In effect, the taxpayers of the nation through decisions of the Federal Power Commission have been subsidizing holders of common stock in the natural gas transmission companies,” he concluded.

The solution, said Hechler, is to take steps to cut down the huge backlog of cases and develop a formula to arrive at quicker decisions on rate applications before the FPC. He did not feel that this was simply a matter of adding more staff, but suggested instead clearing up the minor cases which “clutter the desks of the FPC.” In other words, he said, small producers should be freed from regulation.

HECHLER concluded by stating that pipeline companies should not be allowed to collect any money from consumers, until the FPC had ruled that the proposed rate was sound and justifiable. These principles, he said, are contained in S 1946.



The March of Events

Work on Reactor Sped

A U. S. SUPREME COURT decision last month opened the way for operational tests of the new \$84 million facility, known as the Enrico Fermi atomic plant, when its safety had been assured. Final construction details will be completed this summer on Michigan's first atomic power plant—the world's largest "breeder" reactor—at Lagoona Beach, 30 miles southwest of Detroit on the shore of Lake Erie.

Robert W. Hartwell, general manager

of the Power Reactor Development Company, which constructed the plant, said the reactor would not be operated until definite safety determinations had been made by the Atomic Energy Commission. But the court decision leaves the company free to apply for an operating permit.

Three labor unions had challenged AEC procedures authorizing construction before a definite finding of safety had been made. Work on the reactor began in 1956.

California

Natural Gas Inquiry Sought

AN investigation of the natural gas production industry in the state was ordered by the California Public Utilities Commission. Everett C. McKeage, president of the commission, said the investigation is to determine whether the commission should make recommendations to the state legislature for laws authorizing the commission to regulate the industry.

California law does not permit the

commission to regulate the sale of natural gas at the wellhead. Its regulatory powers extend only to public utilities which distribute the gas to the consumer. About 25 per cent of the natural gas used in California comes from fields in the state. The remaining 75 per cent is supplied to distribution firms by companies which obtain their supplies in Texas, New Mexico, and other states. The California commission has no jurisdiction over the outside suppliers.

Connecticut

To Seek Phone Rate Increase

PLANS to ask the Connecticut Public Utilities Commission for permission to

raise its rates were announced by the Southern New England Telephone Company recently, which blamed new tax in-

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creases enacted by the state legislature.

Roger W. Hartt, company vice president, said the utility's 1962-63 taxes would jump more than \$9.5 million as a result of the state legislative action. "The magnitude and inequity of the legislation," Hartt said, "is illustrated by the fact that the (state) telephone tax is increased 136 per cent, whereas the overall

increase in general taxes is only about 13 per cent."

Asserting that the company has "no other course" than to ask for a rate increase to offset the tax boost, Hartt described the company's current earnings as modest. He said the utility is unable to absorb the tax increase despite stepped-up sales activity and strict expense controls.

Florida

Natural Gas Rates Approved

NEW natural gas rates for Miami were approved by the state public utilities commission, which said they will not even pay the company's operating costs, much less return a profit.

The new schedule, effective June 15th, apparently will be a little lower than the rates being superseded. Under the rates which went out of existence, Florida Gas Utilities Company lost about \$236,000 in 1960 when its expenses amounted to \$1.6 million. The new rate schedule was agreed upon by the company and by the city of Miami, Junior Chamber of Commerce of Miami, and the Greater Miami Apartment House Association.

Under the new schedule, the minimum bill for one month will be \$1.50, which is about 25 cents less than the company had requested.

Local Utility Levies Asked

A LOCAL tax of \$5 a year on telephones in the city was advocated by Miami Beach's new mayor, Kenneth Oka, who also indicated he would seek new local taxes on water, gas, and electric services. Oka said that his proposed utility taxes would bring the city between \$750,000 and \$800,000 in new revenue, which could be used to promote Miami Beach and "boost its economy."

Southern Bell Telephone & Telegraph Company officials estimated there are 99,067 phones in Miami Beach. The proposed telephone tax alone would thus yield \$495,335 a year. Oka said his proposed levy would apply to every telephone. Thus, a home owner with one extension would pay \$10, while one of the major hotels which had 1,000 phones would pay \$5,000.

Kentucky

KU Signs Agreement

KENTUCKY UTILITIES COMPANY has signed contracts authorizing the sale of its Paducah and fringe-area distribution system to the city. The contracts previously had been signed for the city by the electric plant board. Mayor Cherry, in announcing receipt of the signed con-

tracts, said this was "the greatest step in the history of Paducah." He reiterated a previous statement that basic residential electric rates would be reduced at least 10 per cent immediately after the city takes over the power system.

Cherry and the city manager said the electric plant board should be operating

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the electric system before September 1st, depending on how soon the revenue bonds to cover the purchase price can be sold. Paducah voters approved a \$7,050,000

revenue bond issue last November to pay the purchase price and expenses incident to the acquisition of the KU power system.

Missouri

Commission Orders Refund

THE state public service commission has ordered Laclede Gas Company to refund to its customers \$1.9 million it received in rebates from a gas pipeline supplier. Laclede Gas said it was studying the commission's order and had not decided what action it would take.

The company has pending a petition it filed in a St. Louis circuit court last April asking for a declaratory judgment to back up its contention that the rebates

belonged to the company and that the commission had no authority in the matter.

The commission, in an order scheduled to become effective June 27th, claimed jurisdiction. It ordered Laclede to submit a plan to the commission for distribution of the money.

The rebates were made by Mississippi River Fuel Corporation after litigation over charges made by the pipeline supplier. Laclede won the case.

North Carolina

Utility Law Study Scheduled

ASTUDY of North Carolina utility regulatory laws will be made by the State General Statutes Commission, according to a recent announcement by Governor Sanford. He told the press that he would not recommend a special study committee to look into utility regulatory laws or the operations of the state utilities commission. He said instead he had chosen the long-established State General Statutes Commission, which ordi-

narily spends its time in rewriting North Carolina laws.

The commission consists of lawyers named by bar groups, law school deans, legislative leaders, and the governor. A full-time law reviser attached to the staff of the state attorney general is engaged in commission activities.

The governor earlier had said that he would order a study of utility laws after State Utilities Commissioner Ellis charged that the measures were archaic and costly to the public.

Oklahoma

Co-op Bills Signed

GOVERNOR Edmondson signed into Oklahoma law two legislative bills sought by REA co-operatives, but both measures are expected to be challenged in court.

One bill will permit co-operatives to

continue to serve customers in areas annexed by cities. The other provides that the closest utility will get the business when two utilities have lines within 500 feet of a customer, unless the closest gives consent or cannot provide adequate service.



Progress of Regulation

Trends and Topics

Future Hopes Do Not Justify Present Confiscation

COMMISSIONS fix rates for the future and often take into consideration prospective revenues and expenses. Courts and commissions consider future prospects in fixing a return allowance. When a question of present confiscation arises, however, present rather than future earnings control.

The Indiana commission, in its recent decision relating to rates for Public Service Company of Indiana, Inc., disagreed with a contention that the company "should be required to wait for a substantial period to see how its earnings develop under the present rates," and that the company should consider the possibility of establishing special promotional rates to build up load. The commission referred to the United States Supreme Court decision in the West Ohio Gas Company case (6 PUR NS 459), and to an Indiana judicial decision in the Boone County Rural Electric Membership Corporation case (29 PUR3d 409), in support of the rule that a utility cannot be required to submit to a day-by-day confiscation of its property. The commission had found that present rates were producing an insufficient return on the fair value of the property, and it decided it could not legally deny necessary relief on the basis of considerations of this character (37 PUR3d 485).

Views Expressed by Courts

"Present confiscation is not atoned for by merely holding out the hope of a better life to come." Those are the words of Justice Cardozo in the West Ohio Gas Company case (6 PUR NS 459). He said he was not unmindful of the argument urged by counsel for the commission that the effect of lower prices may be to swell the volume of the business, and by thus increasing revenues enhance the ultimate return. This, however, was said to be guesswork and no more. There had been no attempt to measure the possible enhancement by appeal to experience of other companies similarly situated or by any other line of proof.

The Indiana supreme court decision was made in a case in which Boone County Rural Electric Membership Corporation appealed from a judgment upholding a rate order obtained by Public Service Company of Indiana, Inc.

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The commission, upon finding that the company was not earning a fair return, had granted emergency rate relief pending a final determination. The court quoted from an earlier judicial decision (93 PUR NS 464) that a utility as a matter of law cannot be required to submit to a "day-to-day confiscation of its property." The court in this case also decided that a rate order could not be set aside on the ground that in the period following a rate adjustment a substantial increase in gross revenue had occurred above the adjusted operating level upon which it was based. It was said that if a rate order is reasonable under the limited facts available at the time it is made, subsequent changes in conditions cannot make it retroactively erroneous (29 PUR3d 409).

Review of Current Cases

Permit for Construction of Nuclear Power Reactor Plant without Finding As to Safety of Operation

THE U. S. Supreme Court reversed and remanded the decision by a court of appeals (35 PUR3d 129) setting aside an order of the Atomic Energy Commission which continued in effect a provisional construction permit for a nuclear power reactor. The question before the court was whether the commission, in issuing a permit for the construction of a facility which will utilize nuclear materials, such as the power reactor presently involved, must make the same definitive finding of safety of operation as it will have to make before it licenses actual operation of the facility.

The commission, in authorizing Power Reactor Development Company to construct, but not to operate, a fast-neutron breeder reactor for the generation of electric power, made a finding that there was reasonable assurance in the record that a utilization facility of the general type proposed could be constructed and could be operated at the location proposed without undue risk to the health and safety of the public. The commission continued in effect a provisional construction permit but made it subject to the condition

that a more extensive safety investigation and a definitive safety finding would have to be made before operation is permitted.

Applicable Statutes

The basic provision is § 104b of the Atomic Energy Act of 1954, 42 USCA § 2134(b), which authorizes the Atomic Energy Commission to issue licenses for utilization and production facilities involved in the conduct of research and development activities. The statute provides that in issuing licenses under this subsection, the commission shall impose the minimum amount of such regulations and terms of license as will permit the commission to fulfill its obligations under the law to promote the common defense and security and to protect the health and safety of the public.

The Supreme Court said there was no doubt that the term "licenses" as used in the law includes the provisional construction permit. There was also no doubt that construction permits, like all other licenses, could be issued only consistently with the health and safety of the public. But the responsibility for safeguarding

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that health and safety belongs, under the statute, to the commission.

An applicant must first get a construction permit, then he would have to construct his facility, and then he would have to ask the commission to grant him a license to operate the facility. It was said to be clear from § 182a, 42 USCA § 2232(a), applying to the second step of the procedure, that before licensing operation, the Atomic Energy Commission would have to make a positive finding that operation of the facility would provide adequate protection for the health and safety of the public. The court decided that the commission was not required to make such a finding when it issued a construction permit.

The court also discussed the commis-

sion's rules and regulations, congressional hearings on the applicable laws, and debates over the bill in the Senate. The court, after considering all the arguments, said that the laws provided a multistep scheme which Congress and the commission had devised to protect the public health and safety, and the court held that the actions of the commission up to now had been within the congressional authorization. The court said it could not assume that the commission would exceed its powers, or that these many safeguards to protect the public interest would not be fully effective. *Power Reactor Develop. Co. et al. v International Union of Electrical, R. & M. Workers, AFL-CIO et al. Nos. 315, 454, June 12, 1961.*



Board Lacks Power to Change Terms of Aviation Certificate without Notice or Hearing

THE U. S. Supreme Court affirmed a court of appeals decision (280 F2d 43) reversing an order of the Civil Aeronautics Board, which altered a certificate of public convenience and necessity granted to Delta Air Lines, after the certificate had become effective. The question stated briefly, said the court, was whether Congress authorized the board to alter, without formal notice or hearing, a certificate of public convenience and necessity once that certificate has gone into effect?

If not, should it make any difference that the board has purported to reserve jurisdiction prior to certification to make summary modifications pursuant to petitions for reconsideration? The court thought that both these questions must be answered in the negative.

The board is entirely a creature of Congress and the determinative question

is not what the board thinks it should do but what Congress has said it can do. The court analyzed the statutory provisions of the Federal Aviation Act and said it was clear that Congress was vitally concerned with what has been called "security of route," providing assurance to the carrier that its investment in operations would be protected in so far as reasonably possible.

The critical date in the mind of Congress was the date on which the carrier commenced operations, with the concomitant investment in facilities and personnel, not the date that abstract legal analysis might indicate as the "final" date. Decisions by the Interstate Commerce Commission under the Motor Carrier Act, differently worded than the Aviation Act, were distinguished. *Civil Aeronautics Board et al. v Delta Air Lines, Inc. Nos. 492, 493, June 12, 1961.*

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Contributions Rule Changed and Deferred Taxes Recognized in Gas Rate Case

ADOPTING a rate of return of 6.34 per cent on a net investment rate base, the Michigan commission found a deficiency of nearly \$8 million in the gas revenues of Consumers Power Company. After provision for federal income taxes at a rate of 52 per cent, the company will realize additional net income of \$3,804,000. Consumers Power is one of Michigan's largest utilities, serving more than 520,000 gas customers in the central and southern part of the Lower Peninsula.

Cost of Capital and Tax Reserve

The company requested a rate of return of 7.3 per cent on the allowed rate base. No dispute arose as to the cost of debt capital and preferred stock, though the company sought an adjustment to actual historical costs for these items to take into account increments representing the possible cost of funds two or three years in the future. However, because of the uncertainty of future cost rates, the commission used actual historical costs to the company.

The company and the commission staff differed on the return required for common equity, the one maintaining that 11 per cent was essential while the other indicated a 10 per cent return. The company based its claim on its own experience and on the common stock earnings of electric utilities operating in Michigan and adjacent states. It also took into consideration the experience of gas distribution companies operating in the central part of the United States. The staff offered the earnings experience of several groups of gas distribution companies scattered across the country. Additionally, it considered the performance of a number of electric and combination utility companies.

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The commission found that 6.34 per cent would meet all interest requirements, dividends on preferred stock, and provide a return of about 10.7 per cent on the common stock component. This overall return, it was said, will maintain the company's gas department in a healthy financial condition. In arriving at this rate of return consideration was given to the company's accumulated reserve for deferred income taxes on the ground that the benefit of such interest-free capital should be passed on to the ratepayers. The commission observed that it took this action with the full knowledge that in certain jurisdictions a return has been allowed on the funds included in the reserve for deferred federal income taxes.

The Rate Base

Since net plant investment is a clear representation of the depreciated cost of utility facilities, said the commission, it is the firmest foundation upon which to establish rates. The commission rejected a fair value rate base, which was opposed by the staff by reason of "too much conjecture involved in it."

Although the staff recognized that working funds, materials and supplies, and other items are required in carrying on business, it urged that no consideration be given to such requirement in the rate base. It contended that these items are provided from short-term credit and temporarily retained funds rather than funds provided by the investors. Tending to support this position, it appeared that the company has customarily operated with current liabilities in excess of current assets. The company, on the other hand, sought a working capital allowance of \$12 million, conceding a \$3 million offset for income tax accruals. This offset

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amount was derived from a percentage factor applied to the annual charge for income taxes. In support of working capital the company pointed to the significant lag between the incurring of costs and the collection for service.

The commission thought a working capital allowance was necessary. It disagreed with the company's formula for determining the tax offset, however, holding that its procedure substantially understated the amount of temporary funds available for working capital. The commission included in a working capital allowance: (1) one-eighth of cash outlay expenses; (2) average cash balance; (3) average gas in storage inventory; (4) average materials and supplies; and (5) average prepayments. From the total dollar amount of these items, it deducted the sum of average accruals for federal income taxes and average property tax accruals.

Contributions—Other Expenses

Against the staff's position that the inclusion of charitable expenses in the cost of service would force the ratepayer to make involuntary contributions, the company contended that such expenses are unavoidably a part of present-day business expenses and necessary if the company is to assume its responsibilities as a part of the business community. The commission departed from its historical practice of excluding such expenses from the cost of service. It allowed charitable contributions of about \$31,000, donations of nearly \$10,000 to colleges and to industrial and economic development funds, and approximately \$5,000 for chamber

of commerce dues. But it was pointed out that management has the responsibility to exercise proper discretion in holding allowable contributions and donations to a reasonable amount and to see that they go to recipients that contribute to the overall welfare of the communities in which the company operates.

A number of other adjustments were made in calculating net income. A ten-year average temperature was used to determine the gas requirements and revenues. The same temperature basis was applied to a five-year average amount for the purpose of determining the lost or unaccounted-for gas for the test year. The expense of issuing company securities to employees at less than market value was treated as a nonrecurring expense. Actual pay-out for the test year was made the measure of allowable injuries and damages expense.

The cost of national advertising to promote the industrial development of the company's service areas was allocated to departments on the basis of the service supplied in the particular areas benefiting from the advertising. Allocations were made to merchandising operations from the salaries and expenses of the vice president in charge of marketing activities, the division managers, the director of sales, the general advertising manager and his staff, and the general display supervisor and his staff. Finally, the commission ruled that the company's provision for deferred federal income taxes, arising from accelerated depreciation, should be included in the cost of service. *Re Consumers Power Co. Case No. U-291, May 4, 1961.*



Ohio Fuel Gas Case Finally Resolved?

THE Ohio commission issued its order on remand by the supreme court of

Ohio in the Ohio Fuel Gas Company case. The matter had been bouncing between

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the city of Findlay and the commission, and between the commission and the court, since 1958. It originated in a complaint and appeal by the company from an ordinance passed by the city which fixed the price for the sale of natural gas within the city, for a period of two years. On June 11, 1958, the commission found the ordinance rate insufficient to yield reasonable compensation to the company, and further found the fair annual rate of return was 5.5 per cent. (25 PUR3d 207.)

On a rehearing, the commission reaffirmed its 5.5 per cent allowance. The company then appealed to the courts, and on May 18, 1960, the supreme court reversed the commission order and remanded the case. (34 PUR3d 182.)

The court held that, under Ohio statutes, in determining the rate of return to be allowed a public utility on its statutory rate base, consideration had to be given to a corporation having a debt and an equity capital in a total amount substantially equal to the statutory rate base.

What was to be allowed for interest on the amount of such debt was what would be reasonably necessary to pay interest on that amount of debt even though the allowance might be more or less than

what was actually paid by the utility on its existing indebtedness.

In this latest case, the commission reviewed the evidence in the light of the court's comments on remand. The fact that the company was among the largest and most sound financially of the subsidiaries of the Columbia system and the fact that some of the other subsidiaries were somewhat more speculative indicated that the cost of money to the company would be less than that to the parent. Nevertheless, the commission had considered the question on the basis of the testimony of a witness as to the cost of money to the parent corporation.

The commission found that a 6 per cent rate of return to a utility "having a debt and an equity capital in a total amount substantially equal to the statutory rate base" was just and reasonable. The fair annual rate of return of 6 per cent, when applied to a utility with the capital structure used by the supreme court in their discussion, that is, 50 per cent debt and 50 per cent equity, in an amount equal to the statutory rate base, would allow such utility a return on statutory equity of 8.53 per cent, which the commission considered well within the range of reasonableness. *Re Ohio Fuel Gas Co. Case No. 26,371, May 19, 1961.*



Labor Dispute Not Grounds for Certificate Revocation

THE California commission held that a suspension of motor carrier operations because of a legitimate labor dispute is not the kind of voluntary unauthorized suspension for which operating rights may be revoked. A common carrier, pointed out the commission, has the duty to conduct operations within the limits of its facilities and may not, as a general rule, voluntarily suspend operations without authority from the commission. Al-

though the unauthorized voluntary suspension of operations by a common carrier constitutes grounds for revoking operating rights, this is not a mandatory requirement.

The carrier's operations had been suspended because of a labor dispute, and the suspension was not voluntary. Strikes and lockouts are lawful provided they are pursued within legal limits, pointed out the commission. The carrier had the duty

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to take every reasonable and lawful means to attempt to resume service to the public. However, failure to act in good faith so that a labor dispute is unduly prolonged to the detriment of the public, is a voluntary act which may be independent cause for action against employer or employee regardless of the merits of the dispute.

In the case of acts of God and labor disputes the suspension is for an unknown duration, continued the commission, and the common carrier is anxious to resume service at the earliest moment. If a common carrier were required to seek an order temporarily suspending its operat-

ing rights in these situations, as the association bringing the suit contended, there would be at least a short period of time consumed in vacating the order. This could cause an unnecessary delay in the resumption of service, to the detriment of the public and the carrier. A common carrier is not required to seek an order temporarily suspending operations where there is an involuntary suspension. The carrier could do so if it so desired, but it was not a mandatory requirement. *Furniture Manufacturers Asso. of California v Turner*, Decision No. 61995, Case No. 6582, May 16, 1961.



Codal Authority to Remand to Commission

THE Louisiana supreme court held that it had codal authority to remand a case on its own motion to the commission when the interests of justice required it. The case under review involved a lower court judgment enjoining the commission from enforcing an order requiring a railroad to reopen and maintain an agency station.

The loss or profit of a station is not the sole determining factor in ascertaining whether or not the station should be closed, said the court. Where discontinuance is sought, the controlling criteria are the character and population of the territory served, public patronage or lack thereof, remaining transportation facilities, the expense of operation as com-

pared with revenue therefrom, and the financial condition of the railroad as a whole. The record in this case was considered inadequate to make a sound determination of whether or not the agency station in question should be reopened and maintained.

On the remand, the court indicated it desired evidence which would include the population of the area affected, the principal commodity shipped by rail, the extent of such shipments for a relevant period, a map of the area with pertinent distances indicated, and the nature, accessibility, and extent of other transportation facilities. *Missouri P. R. Co. v Louisiana Pub. Service Commission*, 128 So2d 644.



Financial Position of Railroad as Affecting Discontinuance of Agency Station

THE Pennsylvania superior court, in reversing a commission order denying an application to discontinue a railroad agency station, held that, in the absence of substantial evidence of a need

for the continuance of the agency, the financial position of the railroad was important. The commission had ignored the fact that the passenger train service was operated at substantial annual deficits. It

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had ignored the overall financial condition of the company.

From a freight standpoint, it had ignored the existence of a substantial number of motor freight carriers certificated to serve the area in question. The

order, therefore, was held clearly without support in the evidence and so arbitrary and unreasonable as to amount to an error of law requiring reversal. *Reading Co. v Pennsylvania Pub. Utility Commission*, 169 A2d 590.



Use of Service and Alternate Service Availability Controlling Factors

THE New Jersey commission, in granting the Pennsylvania Railroad permission to discontinue passenger service on a certain New York to Cleveland train, based its determination on the use of the service and the alternate service which was available. This accorded with the commission's obligation to give

primary consideration to public convenience and necessity.

The company, however, had relied on its presentation of the use of the service and had not offered any evidence to show the savings which would result from discontinuance. *Re Pennsylvania R. Co. Docket No. 614-311, May 25, 1961.*



Commission Approval of Property Lease Or Sale Mandatory

THE New Jersey commission held in abeyance a petition by the Central Railroad Company of New Jersey for an order approving the conveyance of certain real property for a stipulated sum until the company first filed a petition, nunc pro tunc, requesting approval of certain leases. It appeared that the property under consideration had been leased to the party seeking to purchase the property but that the railroad had never obtained the New Jersey commission's approval.

A utility has the statutory obligation

to obtain commission approval before leasing its property, pointed out the commission, and such obligation cannot be overlooked. Further, it is the commission's statutory obligation to pass upon the issue in its all-important duty to protect the public interest. If the commission and the utility were not so obligated, it would be unnecessary for the commission to promulgate rules contemplating approval of the sale of property and the leasing of property. *Re Central R. Co. of New Jersey, Docket No. 615-352, May 25, 1961.*



The High Cost of the "Lowest Fares in History"

"FLY Eastern Air Lines economy day coach nonstop to New York. Lowest daytime fares in history. Only \$45 plus tax to New York. Fly Eastern's economy day coach to New York and save!"

That's the radio commercial dreamed up by Eastern Air Lines' advertising agency. It cost the airline over \$16,000, after the United States district court found a willful and knowing violation of a Civil Aeronautics Board order to cease

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and desist from advertising "lowest fares" between two points. Deciding factor in the court's eyes was that two other airlines had been authorized to charge identical fares between New York and Miami. Eastern was found guilty on 14 counts in the 16-count information, alleging violations of § 902 (a) of the Federal Aviation Act of 1958.

Whether or not representations tending to mislead may have been made by Eastern was not determinable, said the court, by any naked comparison between "lowest fares" and "lowest fares in history." Words taken from their context often acquire meanings quite different from those they otherwise possess. It did not suffice, therefore, for the airline's advertising committee to imply that the phrase "lowest fares in history" was per-

fectly honest and did not conflict with the cease-and-desist order. By ingenious placement, the court pointed out, "lowest fares in history" might imply competitively that no other carrier offered such fares (the act forbidden by the cease-and-desist order), or otherwise might simply express that in point of time air rates between two given cities had never been lower. In the case of broadcast, the critical words were completely surrounded by reference to Eastern's economy day coach flights, and the listener was exhorted to fly "Eastern's economy day coach . . . and save!" This was a statement calculated by its every intendment to suggest that Eastern's rates were, indeed, lower than its competitors, which advice was found to be misleading. *United States v Eastern Air Lines*, 192 F Supp 187.



Bargain Purchase Price Is Obstacle to Use of Original Cost Rate Base

THE Louisiana commission authorized an increase in natural gas rates to produce a return of 6 per cent, deviating from its established practice of basing a rate of return on cost of money because the company was a closely held corporation and the stock was not traded on the market. The company had asked a return of 6 per cent on estimated original cost less depreciation.

The property had been acquired in January, 1960, for \$20,000. Original cost less depreciation was \$186,790. The commission did not agree that the company

was entitled to a return on the original cost rate base.

The commission thought that the large difference between the purchase price and the estimated original cost should be carefully considered. It was convinced that the present owners bought a "bargain," and it was willing to consider that fact and base its findings in the matter on the purchase price, plus 50 per cent, plus the actual cost of additions since the date of acquisition. *Re Morehouse Nat. Gas Co., Inc.* Docket No. 8389, Order No. 8406, May 9, 1961.



Injunction to Restore Service Properly Denied

THERE was no abuse of discretion, the North Carolina supreme court ruled, in a trial court's refusal to issue a preliminary mandatory injunction requiring

a gas company to resume service to the plaintiff-customer, since the latter suffered no irreparable injury and had an adequate remedy at law. Besides the in-

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junction, punitive damages were sought. It appeared that the customer could have his service restored upon the payment of accumulated unpaid bills of \$20 and a reconnection fee of one dollar.

The question whether a preliminary mandatory injunction should be issued, said the high court, rests in the sound

discretion of the trial court and will not be disturbed on appeal unless contrary to some rule of equity or the result of an improvident exercise of judicial discretion.

The trial court's action was affirmed. *Greel v Piedmont Nat. Gas Co., Inc.* 118 SE2d 761.



Suspension of Rate Change after 30-day Notice Period Upheld under Natural Gas Act

THE provision of § 4(d) of the Natural Gas Act requiring 30-day notice of a change of rate, a federal appeals court indicated, is merely a minimum procedural requirement imposed upon a natural gas company and is not a limitation set upon the Federal Power Commission's powers. The court affirmed a commission order suspending a rate change proposed by Pan American Petroleum Corporation.

Pan American contended that, inasmuch as thirty-two days had expired from the date of its filing notice of a rate change, the rate had become effective even though it would not be collectible under the producer's contract until a later date.

Since § 4(d) of the act prescribes a 30-day notice of a proposed rate change, it was argued that the commission was without power to suspend the rate change subsequent to the 30-day notice period.

Favored-nation Clause Involved

The commission had suspended another producer's contract rate which, under a favored-nation clause in Pan American's contract with its pipeline purchaser, entitled Pan American to the rate increase which it proposed in this case. The effect of the commission's suspension of the triggering rate was to defer as a matter of fact Pan American's right to demand

an increased rate. The legal effect, the court pointed out, was to change Pan American's effective date as contained in the notice and to give the commission the discretionary power it chose to exercise. The commission's order of suspension as to Pan American was, therefore, not untimely.

Suspension Not Barred

It was recognized that the failure of the commission to suspend a rate change before the effective date gives tacit approval which requires, as to an existing rate, a proceeding under § 5 of the act to upset it. And the effective date of a proposed change coincides with the expiration of the 30-day notice period in those instances where the notice of change sets forth the date of applicable collection change as one prior to the expiration of the period of notice.

But the commission's power to suspend is not barred thirty days after the date of filing of notice. The assumption of such a limitation, said the court, ignores the working of the act which requires the notice to state "the time when the change or changes will go into effect." The natural gas company is required to indicate a specific date upon which the proposed change is to become effective. *Pan American Petroleum Corp. v Federal Power Commission*, 287 F2d 469.

Filing of Gas Producer Contract Amendment Does Not Amount to Rate Change

A FEDERAL appeal court affirmed a letter order of the Federal Power Commission which, in effect, denied as presently effective a change in rate level for contract gas sales by Sunray Mid-Continent Oil Company to a pipeline company.

The original contract between the parties provided for a price of 15½ cents per Mcf, reserving to Sunray the right to process the gas and retain all liquid hydrocarbons. In early 1960 buyer and seller agreed to a contract change whereby, for a consideration of one cent per Mcf, Sunray would relinquish its right to reclaim the liquid hydrocarbons. The producer then reported the contractual change to the commission by filing a "Notice of Change in Rate Schedule," asserting the change to be effective upon the date of authorization or thirty days after filing, whichever should occur first. A comparative statement of sales and revenues was not submitted with the filing as required by the commission's regulation in respect to a change in rate level. The producer explained that this was not necessary because the proposed contract change did not change the rate.

The commission indicated that it accepted the rate filings for filing and that "such rate schedules have become effective on the dates shown [May 12, 1960] upon expiration of thirty days' statutory notice." The parties interpreted this as authorizing an increased contract price beginning May 12th. Later the commission by letter order refuted this interpretation, noting the producer's failure to file the comparative statement of sales and revenues and the absence of a state-

ment in support of a rate increase. The commission indicated that the change was not considered a change in rate but only "a contractual vehicle under which Sunray could at a future date file a notice of change in rate." As such, the contract amendment was merely accepted for filing.

Sunray urged that the commission had no rate jurisdiction over the contract amendment, though no claim of a non-jurisdictional sale was asserted. The producer argued that a 16½-cent rate had become effective both through affirmative acceptance of the rate by the commission and the jurisdictional limit of thirty days as contained in § 4(d) of the Natural Gas Act.

Acceptance as Contract Change Only

The court found Sunray's argument faulty. Section 4(d) requires gas companies to file all contract changes regardless of whether they affect the rate level or not.

There is no burden on the commission to explore, at its peril and that of the public, the facets of a notice of contract amendment to determine the subjective legal theory that may influence the extent of notice given. The commission was justified in accepting the filing of the contract amendment for what it purported to be—a change of contract not affecting rates. Neither by its affirmative action nor by any nonaction was the commission bound to accept a new rate, the existence of which was expressly denied by the filing producer. *Sunray Mid-Continent Oil Co. v Federal Power Commission*, No. 6589, May 6, 1961.



High Debt Ratio Produces Low Return

THE Ohio commission, in authorizing increased telephone rates, found that a return of 3.50 per cent on a reproduction cost rate base was reasonable. The record indicated that the company had a debt ratio of approximately 92 per cent and it further appeared that the actual rate of interest on debt was 2 per cent.

One-way Extended-area Service Discontinued

The commission granted the company's request for authority to discontinue one-

way extended-area service to an exchange of another telephone company. This service had already been discontinued after conversion to dial service, but for a representative one-month period prior thereto there were 552 main station services at the company's exchange and during this period there were only 12 toll-free calls made. No objection had been received from subscribers with regard to discontinuance of this service. *Re Oakwood Mut. Teleph. Co. Case No. 29,315, June 9, 1961.*



Proposed New Financing Is Factor in Allowance Of "Upper Range" Return

THE Connecticut commission granted Greenwich Gas Company a rate increase of \$60,000 a year—slightly over one-half of the increase requested. The company sought merely to recoup an increase in the cost of purchased gas. After rate base and income adjustments, the commission found that \$60,000 in additional income would cover this added cost and that it would result in a rate of return of 6.5 per cent on a net investment rate base.

The commission predicated this level of return, which it regarded as being in the upper range of reasonableness, upon the company's need for additional revenues to service proposed new stocks and bonds for a construction program. If the company should decide not to pursue its projected financing during the current year, the commission will take another look at its earnings.

Rate Base and Income Adjustments

Customers' advances for construction, subject to refund, were excluded from the rate base, since it is inequitable to require

ratepayers to pay a return on funds which they contribute. Working capital was computed on the basis of forty-five days' operating expenses.

In calculating gas costs and revenues, the commission allowed for weather normalization over a ten-year period. It cautioned that higher earnings realized during cold years should not be paid out in increased dividends but rather should be held in reserve in order to make up for poor earnings during warm years.

Rate case expenses were required to be amortized over a five-year period. Interest on notes issued to finance the cost of converting to natural gas was treated as a component of the return on investment in plant, not as an operating expense as the company proposed. Since construction work in progress was included in the rate base, it was required that interest be added to operating income.

Self-supporting Extensions

The commission expressed concern about the scope of the company's construction program. While Greenwich Gas

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Company's customer density is lower than that of other Connecticut gas distribution companies, it appeared that its investment per customer is almost twice that of such other utilities. The company has the duty to see that extensions are reasonably

remunerative, said the commission, so that existing ratepayers will not be called upon to subsidize extensions that are not supported by those directly served. *Re Greenwich Gas Co. Docket No. 9999, May 11, 1961.*



North Carolina Commission Approves Wide Area Telephone Service

THE North Carolina commission approved Southern Bell's wide area service tariff. The rates were set at \$500 a month for a full-time access line and \$250 a month for fifteen hours' use of the service, with the privilege of additional time at \$15 an hour.

For the benefit of the uninitiated, wide area telephone service is an additional method of handling toll calls. Customers who use toll service to a great extent find the service more economical, as well as more expedient. An access line extending from a connection in a central office to the customer's premises enables the customer to dial his own toll calls to all points and territories of concurring companies.

In this manner, the long-distance operator is bypassed and delays often caused by peak-load conditions are eliminated. The customer also has the full privilege of toll service to the extent contracted for at a flat rate. The result is that the customer has a better service, and the telephone company is able to economize

to the extent operators' service is eliminated.

The real question at issue hinged on the proposed rates for the service. It was evident that a toll customer whose experience had not been such with toll service as to justify the prescribed rates would not take the service. The customer whose toll experience had been such as would enable him to effect a saving at the rates prescribed would, of course, want the service.

The commission noted that a determination had to be made as to whether the prescribed rates, which would bring about the saving to the customer, would reimburse the company for the investment involved to the same extent as the rates for its other service. Figures based on past experience were not available. The commission, therefore, conditioned its order on the year's experience, directing the company to file a complete report at the end of this period. *Re Southern Bell Teleph. & Teleg. Co. Docket No. P-55, Sub 304, May 26, 1961.*

Other Recent Rulings

Financial Position Important. The Pennsylvania superior court held that, in the absence of substantial evidence of a need for the continuance of a particular railroad agency station, the financial posi-

tion of the railroad is important. *Reading Co. v Pennsylvania Pub. Utility Commission, 169 A2d 587.*

Limited Escalation Clauses Allowed.

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Modifying its order of March 3, 1961, rendering inoperative all indefinite escalation clauses contained in natural gas producer contracts filed after April 3, 1961, the Federal Power Commission ruled that limited price-redetermination provisions, invocable not more than once in every five-year contract period and based on rates subject to the commission's jurisdiction, should be allowed in order to permit pricing flexibility and to provide an incentive for long-term contracts. *Re General Rules and Regulations Relating to Automatic Escalation and Favored-nation Clauses (18 CFR 154.93) Docket No. R-153, Order No. 232A, March 31, 1961.*

SAGES Facilities. The California commission directed Pacific Telephone and Telegraph Company to reclassify its rates for SAGES (Semi-Automatic Ground Environment System) facilities from its exchange tariffs to its private line tariffs. *Re Pacific Teleph. & Teleg. Co. Decision No. 61915, Case No. 6950, May 1, 1961.*

Collection of Effective Rate. When a suspended rate becomes effective upon motion filed by a natural gas company pursuant to § 4 of the Natural Gas Act, said the Federal Power Commission, the company is required to charge and collect the rate so made effective and is not permitted to postpone collection until the final determination of the case in order to avoid posting surety for a possible refund. *Re Prentice (Operator) et al. Docket No. G-19475, April 20, 1961; Re Durbin Bond & Co., Inc. (Operator) et al. Docket No. G-19925, April 20, 1961.*

Bond Issue. Washington Gas Light

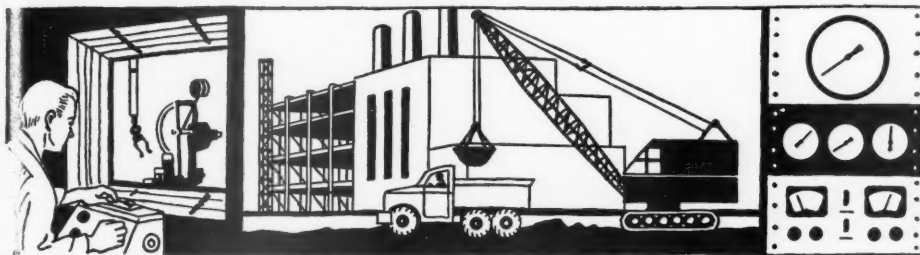
Company was authorized by the District of Columbia commission to issue \$15 million of refunding mortgage bonds at approximately 5½ per cent interest, where the pro forma debt ratio would be 49.48 per cent and gross revenues on a consolidated basis would cover all debt service requirements 4.67 times. *Re Washington Gas Light Co. PUC No. 3651, Formal Case No. 477, Order No. 4749, April 21, 1961.*

Deferred Tax Benefit. In connection with a gas pipeline rate case, the Federal Power Commission pointed out that the company is entitled to the benefit of including deferred taxes in its cost of service and that this benefit should not be diminished by a proportional reduction in working capital. *Re Kansas-Nebraska Nat. Gas Co. Docket No. G-12391, May 2, 1961.*

Stock Split Authorized. The Federal Power Commission authorized a two-for-one stock split for Idaho Power Company upon a representation that the purpose of the split was to reduce the price per share to a market level which would more readily attract new investors and broaden the interest in the company's stock. *Re Idaho Power Co. Docket No. E-6993, May 4, 1961.*

Rate Case Expenses. The magnitude of rate case expenses should be reasonable in relation to the size and financial resources of the company, the Connecticut commission observed, expressing some concern about an expense of \$7,000 claimed by a water company serving only 474 customers. *Re Newtown Water Co. Docket No. 9983, May 10, 1961.*

Industrial Progress



Conduct Wire and Cable Company Introduces New ATRC Cable

Anaconda Wire and Cable Company has introduced a new cable especially designed for telemetering, automatic relays, communications circuits and super-control systems.

Robert E. McIlvane, manager—Communications Products Division, says the new cable is now in production and would have a rating of 300. He stated that it was particularly adaptable for aerial, duct, and burial use in telemetering, automatic relays, telephonic communications circuits, supervisory control for logging and data recording.

McIlvane pointed out that the cable was particularly adaptable for use in line companies, public utilities, railroads and industrials.

Additional information may be secured by writing Department EFL, Anaconda Wire and Cable Company, 25 Broadway, New York City, asking for Anaconda specification CS 237-1.

Engineers Predict Completely Automatic Power Plants in Near Future

Electric power plants of the future will rely completely on automatic control, with significant savings to utilities.

This prediction for the future was made by J. K. Dillon, manager of utility engineering for the Pittsburgh Electric Corporation and L. L. Everett, director of research for the Philadelphia Electric Company.

A paper presented at a recent meeting of the American Society of Mechanical Engineers, the coauthors reached this conclusion on steam

power plant automation:

"While heat rate and reliability improvement are certainly factors in justifying automation, the real economic justification lies in two places. One is in the elimination of manual control apparatus. The other is in the reduction of the cost of generation apparatus when it is designed for strictly automatic operation. This implies that the power plant of the future will have provision for automatic control and rely on it completely. The resulting savings should be significant."

The authors offered several economic incentives for automatic control, noting that the most important are increased reliability, improved operating efficiency, and more productive use of manpower. It was pointed out, however, that behind each economic incentive has been the growing complexity of steam power apparatus and its operation.

Six computer control power stations are now under contract in the electric utility industry. Westinghouse is building the largest and most complex of these for the Sewaren station of Public Service Electric and Gas Company of New Jersey, according to the statement.

New Manual on "Dillon Remote-Indicating Load Cell Systems"

W. C. DILLON & Co., Inc. has issued a new manual which illustrates the many uses of remote indicating load cell systems throughout industry and suggests imaginative ideas for new applications not already commonly known. The new Dillon differential transformer principle is compared with conventional tube and circuitry designs.

Write for Bulletin R-2 to W. C. Dillon & Co., Inc., 14620 Keswick street, Van Nuys, California, Attention: Mr. George A. Dillon.

Tower of Light Planned for Electric Company Exhibit At New York World's Fair

A TOWER of light expected to be visible from as far away as Boston, Massachusetts, and Washington, D. C., and described as "the greatest concentration of light ever generated," is planned as part of the investor-owned electric utility companies' exhibit at the 1964-1965 New York World's Fair, Ernest R. Acker, Chairman of the Board of Central Hudson Gas & Electric Corp., told the 29th Annual Convention of the Edison Electric Institute recently.

Mr. Acker, who also serves as Chairman of the EEI World's Fair Committee and President of Power & Light Exhibit, Inc., the company set up to administer the electric companies' participation in the Fair, said that the beacon would be 24 billion candlepower. It will help focus the public mind on the electric companies' exhibit and on the Fair itself, he said.

The tower of light, developed by 24 "light cannons," each of 1 billion candlepower, will be based in a rainbow-colored building 80 feet high, located on the main traffic artery from the principal entrance to the Fair.

Describing the interior of the exhibit building, Mr. Acker said that visitors would be conveyed on a moving ramp to the top floor of the structure. From there they will begin a spiral walk downward, across flat exhibit floors, separated by easy ramps

(Continued on page 16)

ENGINEER—DISTRIBUTION

Nationally known management consulting organization needs a college graduate with 5-10 years experience in natural gas distribution, planning, design and operations. Ability to work with electric computers and analyzers is desirable. Some travel required. Include complete resume of education, experience, present compensation and salary requirement in first letter. All applications will be treated confidentially.

Box Number 76, Public Utilities Fortnightly, 332 Pennsylvania Building, Washington 4, D. C.

INDUSTRIAL PROGRESS—(Continued)

or steps. A series of displays along this path will present various aspects of electric industry operation.

The electric companies' exhibit is being designed by V-E-K Associates. Mr. Acker stated that preliminary estimates indicate a cost of \$6 or \$7 million for the entire Power & Light Exhibit project, a figure which is "of the same order of magnitude as the estimated exhibit costs of other organizations of similar character."

Translators Make Honeywell, IBM Systems of EDP Compatible

MINNEAPOLIS—Honeywell's Electronic Data Processing division has announced development of magnetic tape translators that it says will provide continuous "on-line" compatibility

between Honeywell computers and IBM systems.

The translators enable Honeywell 800 and 400 EDP systems to work from tapes written by IBM machines and to write tapes acceptable to the same equipment, said Walter W. Finke, EDP division president.

He said the translators for the Honeywell 800 will rent for \$1,950 a month. The purchase price is \$93,600. The Honeywell 400 units rent for \$975 a month and sell for \$43,875. Availability of the equipment will be 12 to 15 months from receipt of orders.

Mr. Finke said the new translator supplements somewhat different units developed earlier for "one shot" conversion of data on both IBM and Univac tapes into Honeywell language. These converters, he explained, are being operated by Honeywell on a Service Bureau basis as part of the company's program to establish compatibility between its and non-Honeywell EDP systems.

"The new translators are designed to provide continuous interchangeability of data between Honeywell and IBM computers operating in the

same organization, or in cases where there may be an interchange on magnetic tapes between more organizations using different EDP systems," Mr. Finke said.

Gas Industry First to Break Ground at New York 1964-65 World's Fair

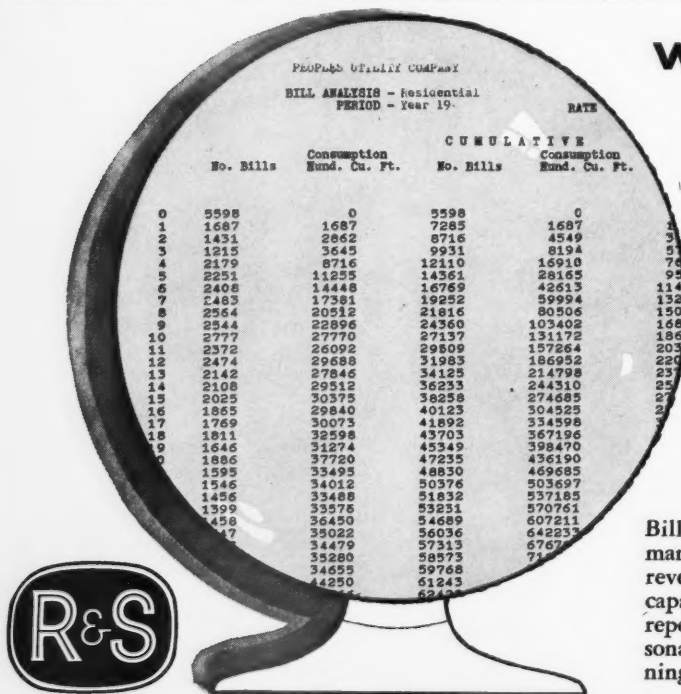
THE gas industry scored its first in connection with the New York 1964-65 World's Fair by breaking ground June 15 for its international exhibit, according to a recent announcement.

John E. Heyke, president of the American Gas Association, Inc., the organization formed to direct the gas industry's participation in the fair, noted that the industry is the first major group to subscribe to the exposition and the first to occupy space.

"I am happy that the gas industry was able to score another first today," said Mr. Heyke, who is president of The Brooklyn Union Gas Co.

Chester S. Stackpole, managing director of the American Gas Association, hailed the building as "an

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PUBLIC UTILITIES FORTNIGHTLY-JULY

INDUSTRIAL PROGRESS—(Continued)

unique." He said the design of building will attract visitors to its exhibit. "This is a great day for the gas industry," Mr. Cole said. "And the greatest should go to John Heyke."

A 10 by 10 foot picture shown at the building gave an indication of what the gas industry's building will look like. It showed a pure structure which appears to be at wall.

The structure's entrance and exit have the largest air curtain wall installed. A restaurant, with a capacity for 200 persons, will have an air on three sides. The major area of the building will be enclosed with glass, installed in a manner similar to the glass in the invisible window of a jeweler's store.

According to Walter Dorwin Koenig Associates, the designers of the building, this will make the walls invisible, thus creating "an entirely new architectural technique." The canopy roof will be translucent, allowing sunlight to filter through in daylight hours. At night, the building will glow with light.

The 40,000 square foot pavilion will be completely air conditioned by gas. The two-story structure will be 50 feet wide and measure 300 feet in length and 30 in width.

One of the outstanding features of the building will be an elevated revolving walk, 110 feet in diameter which will pick up visitors at the door of the building and carry them through the building in four minutes. This will give visitors a preview of the building and permit them to select displays to which they would like to devote more

used to start and operate a critical assembly. U-233 provides for longer fuel burn-up, through better neutron economy, than other types of uranium.

The AETR research and development program is sponsored by the group of 15 investor-owned utilities in the Southwest interested in the development of economical power from nuclear energy.

Companies comprising Southwest Atomic Energy Associates are: Arkansas Power and Light Company, Arkansas-Missouri Power Company, Central Louisiana Electric Company, The Empire District Electric Company (Missouri), Gulf States Utilities Company (Texas), Kansas Gas and Electric Company, The Kansas Power and Light Company, Louisiana Power and Light Company, Mississippi Power and Light Company, Missouri Public Service Company, New Orleans Public Service Inc., Oklahoma Gas and Electric Company, Public Service Company of Oklahoma, Southwestern Electric Power Company (Louisiana) and Western Light and Telephone Company (Kansas).

Schubert Named G-E Power Transformer General Manager

DR. A. Eugene Schubert has been named general manager of General Electric's Power Transformer Department, Pittsfield, Mass. The appointment, effective July 10th, was announced by Robert L. Gibson, G-E vice president and general manager of the company's Transformer Division.

Gerald A. Hoyt, present department general manager, is taking a special assignment in General Electric's defense business.

Transite Electrical Conduit Described in J-M Brochure

TRANSITE Conduit Types I and II are completely described in a new Johns-Manville brochure, TR-247A. Type I is a thin-walled, asbestos-cement conduit for installation in concrete, and Type II is a thicker-walled conduit for direct burial.

The 12-page brochure contains considerable reference data of use to designers, specifiers, and purchasers of electrical duct. A handy table lists the most important conduit requirements and the accompanying properties and performance factors of Transite conduit that fill these requirements.

Copies of TR-247A are available from Johns-Manville, Pipe Division, 22 East 40th Street, New York 16, New York.

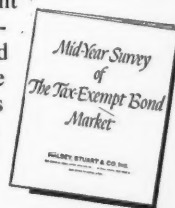
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Our *Mid-Year Survey of the Tax-Exempt Bond Market* provides significant background information, discusses supply and demand, volume and yields, and interprets the current trend and outlook.

We'll be pleased to send you this helpful survey now, without cost or obligation. In addition you will receive our tax chart with which to determine quickly the value of federal income tax exemption in your particular income bracket. We think you may be surprised to learn the amount of taxable income required to equal the yield on today's tax-exempt bonds. Ask for folder PF-71.



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U-233 Fuel System Produces Chain Reaction

A U-233 fuel system has achieved a chain reaction for the first time in a commercially sponsored nuclear facility, Atomics International, a division of North American Aviation, Canoga Park, California, announced recently.

The operation of the machine, called a "critical assembly," with the U-233 is part of the Advanced Epithermal Thorium Reactor (AETR) project conducted for Southwest Atomic Energy Associates by Atomics International. It is the second in a series of experimental cores to be operated in the machine to study their characteristics of a full-scale thorium reactor.

It also marked the first time a fuel of thorium and U-233 has been

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INDUSTRIAL PROGRESS—(Continued)

Babcock & Wilcox Receives \$12-Million Boiler Contract

THE Babcock & Wilcox Company recently received a contract for nearly \$12-million to supply a Cyclone Furnace-fired super-critical Universal pressure steam generator for the Public Service Electric and Gas Company's new Hudson generating station in Jersey City, N. J.

In announcing the major contract, B&W stated that the unit is the first one designed for critical pressure operation for use in the New York, and New England states area.

According to B&W, the "once-through" method of steam generation, available in the company's Universal Pressure boilers, is the "essence of operational simplicity." In principle, the boiler may be visualized as a long tube. Water enters at one end, picks up heat, changes to steam, becomes superheated and leaves at the other end at the desired pressure and temperature.

When the boiler goes on-line in early 1965, it will be the largest steam producer in the utility's system. The unit will develop 2,450,000 pounds of steam per hour at a pressure of 3,625 pounds per square inch and a temperature of 1000 degrees Fahrenheit for a 400,000 kilowatt turbine-generator. It will have two reheaters for 1025 degrees Fahrenheit and the main steam for 1050 degrees Fahrenheit.

At full load, the unit will burn approximately 100 tons of coal daily, enough to fill a train of 40 coal cars. Provision has been made for future firing of the unit with fuel oil.

The utility's system, which serves about 20 per cent of New Jersey's area and 80 per cent of its population, has a current rated capacity of over 3 1/2 million kilowatts. By the time the new steam generator goes into operation, the total system capacity of PSE&G will approach 5 million kilowatts.

Public Service Electric and Gas to Install Six RCA Data Processing Systems

THE Radio Corporation of America announced recently it will install six all-transistorized electronic data processing systems at the 80 Park place, Newark, headquarters of the Public Service Electric and Gas Company.

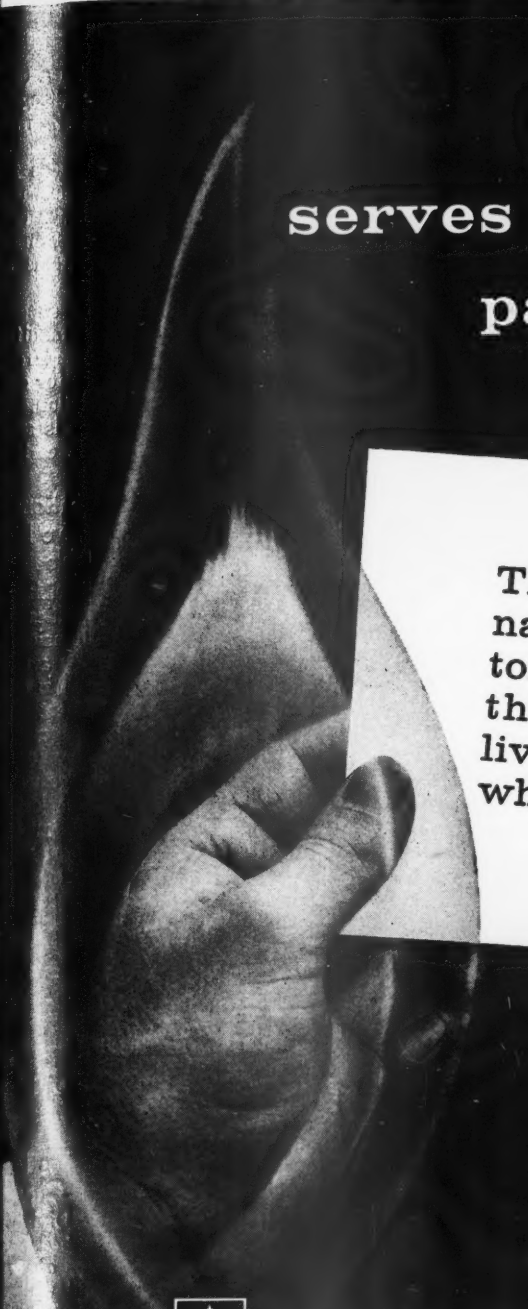
In making the announcement, Donald H. Kunsman, vice president and general manager, RCA Electronic Data Processing Division, said the New Jersey system, one of the largest in the country, has signed a five-year agreement for one RCA 601 and five RCA 301 systems to increase economy and efficiency.

Mr. Kunsman noted that company-wide operations to be handled by the computer systems will include customer billing, accounting for payroll, material stores, depreciation studies and many research, engineering and operating functions.

Donald C. Luce, president of Public Service Electric and Gas Company, said installation of the system, which will start in the Fall of 1962, is part of the company's continued modernization program designed to improve service to its customers.

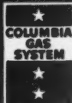
"In addition to contributing to greater efficiency in service," Mr. Luce said, "the data processing systems will equip Public Service to handle the mounting volume of business."

(Continued on Page 20)



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INDUSTRIAL PROGRESS—(Continued)

of accounting and engineering activities which the company faces with the continued expansion of industrial, commercial and residential business in New Jersey."

Public Service will be the first electric and gas utility to use the new RCA 601 system, Mr. Kunsman pointed out.

Dravo to Erect Piping for Illinois Power Station

ALL piping for a new compressor station serving a new natural gas

storage field in southwestern Illinois will be fabricated and erected by Dravo Corporation, Pittsburgh, according to a recent announcement.

The station, which will be remotely operated, is being engineered, designed and built for the Illinois Power Company, of Decatur, Illinois, by Stearns-Roger Manufacturing Company, of Denver, Colorado.

Located at Tilden, Illinois, near East St. Louis, the station will be equipped with three 800-HP electric-powered compressors. It will pump gas either to or from storage, and

will be operated from a control located at the existing Ft. Illinois station, about 22 miles west of Tilden.

Dravo's work includes fabrication of main suction and discharge piping for jacket water coolers, compressed gas coolers, and connecting various items of equipment in the station.

Dravo, under the supervision of Stearns-Roger, will modify instrument piping at the Freeborton station to permit its use for control of the Tilden station.

The Tilden station is scheduled to go into operation in early September.

This advertisement is neither an offer to sell nor a solicitation of offers to buy any of these securities. The offering is made only by the Prospectus.

NEW ISSUE

June 23, 1961

450,037 Shares Northern Illinois Gas Company Common Stock

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Holders of the Company's outstanding Common Stock are being offered rights to subscribe at \$49.50 per share for the above shares at the rate of one share for each 16 shares of Common Stock held of record on June 22, 1961. Subscription Warrants will expire at 2:30 P.M. Chicago Time on July 11, 1961.

The several Underwriters have agreed, subject to certain conditions, to purchase any unsubscribed shares and, both during and following the subscription period, may offer shares of Common Stock as set forth in the Prospectus.

Copies of the Prospectus may be obtained from any of the several underwriters only in States in which such underwriters are qualified to act as dealers in securities and in which the Prospectus may legally be distributed.

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A BROCHURE describing the functions and responsibilities of the Corporation's Communications Systems Division is now available.

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Major General E. Blair (U.S.A.F. Ret.), is general manager of the Communications Systems Division, and Henry E. Hocke is assistant general manager.

Copies of the brochure may be obtained by writing to Matt Kerber, Communications Systems Division, Philco Corporation, Ft. Washington, Pa.

Midwest Publishes Pipe Dimension Chart

MIDWEST Piping Division Company has published a 11 in. pipe dimension chart showing outside diameter and wall thickness for all sizes of pipe from 1/2 in. to 42 in. The chart includes information from ASA Standard B36.10 relating IPS and schedule number to their relationship, and includes wall thickness added in the 1959 revision.

Suitable for desk or wall mounting, the chart is a convenient reference eliminating the need for reference standards booklets.

A copy of the chart is available free from Midwest Piping Division, Crane Co., Box 433, St. Louis, Missouri.

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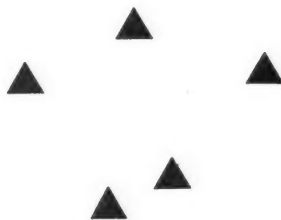
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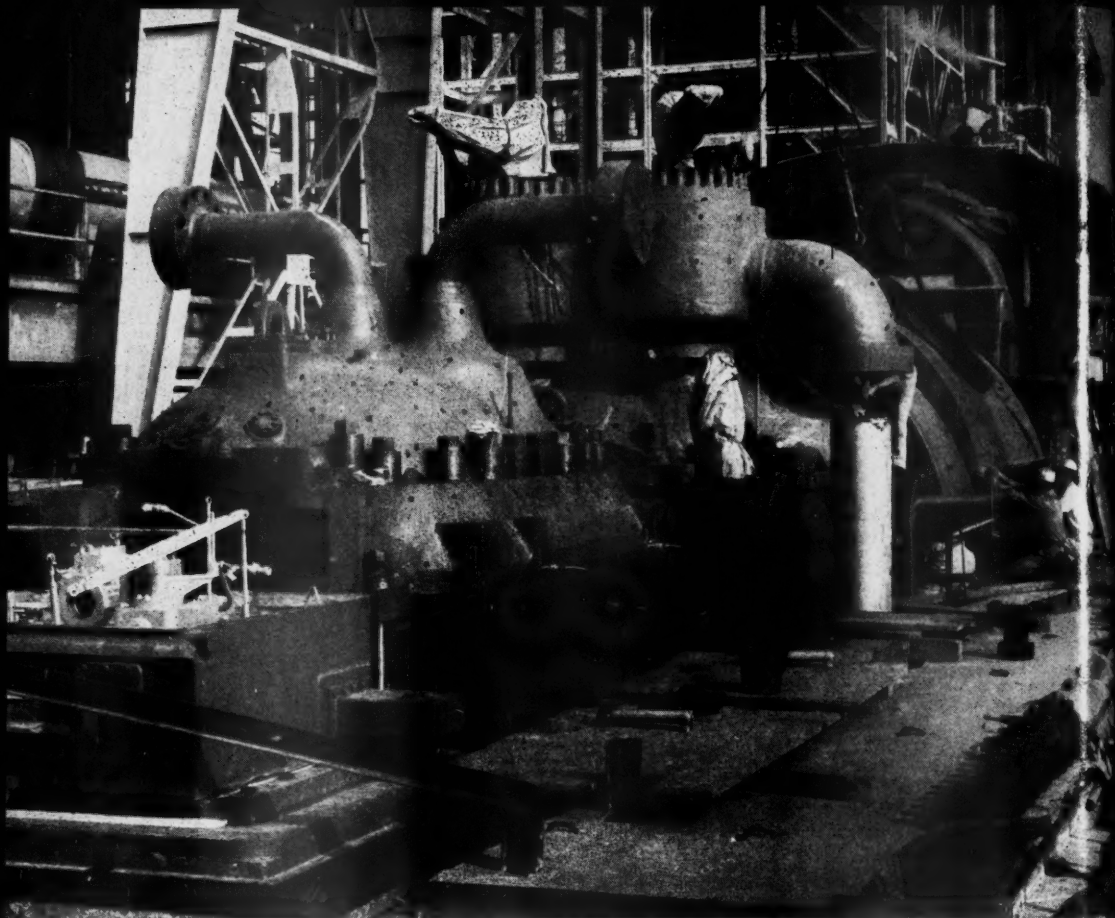
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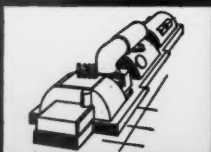
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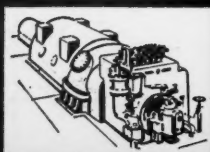
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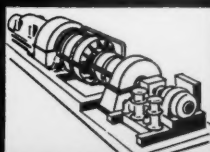
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